ROAD and TRACK

K

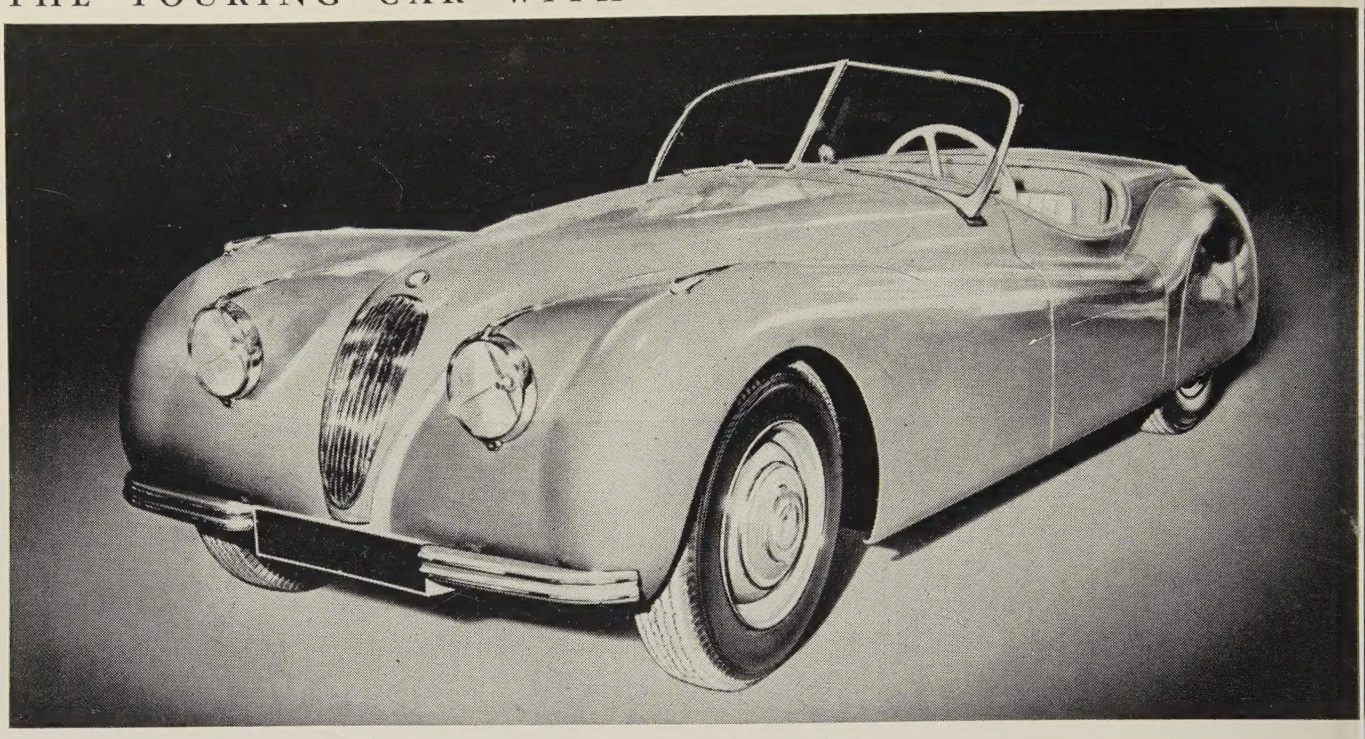
35c

MARCH, 1951

Pinin Farina Alfa Romeo — Page 3

The Motor Enthusiasts' Magazine

THE TOURING CAR WITH THE RACING PERFORMANCE



International successes of the

JAGUAR

XK 120

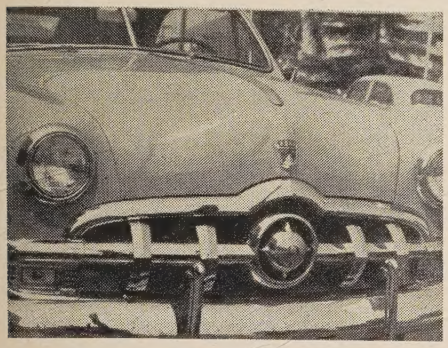
JABBEKE	(BELGIUM, 1949)	Within a few months of its introduction an entirely standard, stock model, Jaguar XK 120 attained a speed of 132.6 m.p.h. over a measured mile running on ordinary pump fuel. Officially observed and certified by the Royal Automobile Club of Belgium, this represents the highest speed ever achieved by a stock production car.
SILVERSTONE	(ENGLAND, 1949)	In the 1-Hour International Production Car Race, Jaguars were placed first and second, winning the race outright irrespective of class, and returning the fastest lap speed of the race.
PALM BEACH	(FLORIDA, 1950)	At the race meeting promoted by the A.A.A. the production car race was won by a Jaguar, also gaining the special award for the best performance by a British car.
ALPINE TRIAL	(1950)	Mr. and Mrs. Appleyard make front-page news throughout the world when they gain a magnificent triumph in the Alpine Rally with their Jaguar XK 120. Without losing a single mark during the arduous 6-day trial, they won an Alpine Cup and 11 other Cups and awards—the best performance of the whole trial.
SILVERSTONE	(ENGLAND, 1950)	Jaguar repeats its 1949 success by again winning the unlimited class in the Production Car Race and, going further, by gaining the coveted Team Prize.
R.A.C. TOURIST TROPHY	(N. IRELAND, 1950)	In the first race since the war for the R.A.C. Tourist Trophy at Belfast, Jaguar takes the leading honours at the initial attempt, Stirling Moss wins Tourist Trophy and, amongst other awards, Jaguar takes the Team Prize.
MONTLHERY	(FRANCE, 1950)	Driven in 3-hour spells by two drivers, a Jaguar was driven for 24-hours at an average speed of 107.46 m.p.h. on October 24/25. In the final hour an average of 112.40 m.p.h. was returned with one lap at 121.40 m.p.h.

The famous XK 120 engine also powers the NEW JAGUAR MARK VII SALOON

THE FINEST CAR OF ITS CLASS IN THE WORLD

GRILLE TRIM

For 1949-50 Ford & Chevrolet



Massive beauty and the luxurious appearance of the bigger cars. Heavy chrome, lustre bright finish. Clamps on, no drilling, easy installation. Specify make, year and model. **$13.95 set.**

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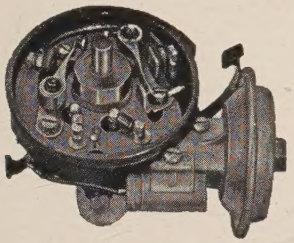

Convert your own 1949-51 Ford or Mercury distributor and save the cost of buying a complete distributor. Look at the advantages of the dual point setup over stock equipment:

- **Eliminates missing and bucking.**
- **Increased acceleration.**
- **All around smoother performance.**
- **Longer point life.**
- **Higher R.P.M. without cutting out.**
- **All wearing parts stock Ford—obtainable anywhere.**
- **Uses only one coil and one condenser.**
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- **Includes special breaker plate, 2 sets of points, buss bar.**

$6.95

CUSTOM CATALOG

Forty bulging pages, loaded with hundreds of photographs and the latest in custom accessories. Chrome dash panels, electric door and trunk conversions, chrome motor accessories, dual pipes, speed equipment, etc. — **25c**

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All mdse. guaranteed for satisfaction. 25% deposit required with order.

CONSISTENT PERFORMANCE...

Bill Cramer, prominent Los Angeles Chrysler-Plymouth dealer and sportsman, shown standing by his consistent 1949 Plymouth stock car in front of Cramer's local agency. Bill installed Grant Piston Rings in preparation for the 1950 season.

Grant Piston Ring Company
Los Angeles, California

Gentlemen:

We are proud to submit the following performance record on one of our cars equipped with Grant Rings.

Our strictly stock 1949 Plymouth Coupe has competed in 7 major events from 100 to 300 miles. The car has qualified faster than any other type of car at several events and any other Plymouth at all events.

We have finished first twice, second three times, third once and fourth once. I am well satisfied with the consistent performance of your rings in our car for several thousand racing miles.

You are probably interested in why I chose Grant Piston Rings. Being a racing enthusiast, myself, and one acquainted with engine efficiency, I've followed the development of your product and its enviable record for some time. Trial of Grant Rings has been justified by the results in my Plymouth.

Sincerely yours,

Bill Cramer

Dealership particulars given when requested on your letterhead. Write for Gerry Grant's FREE Catalog and name of nearest Grant Dealer.

Grant PISTON RINGS

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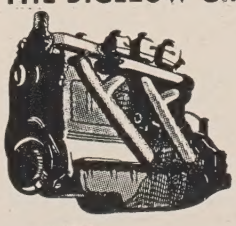
THE BIGELOW GIMMY PRODUCES 248 HORSEPOWER AT 4850 RPM



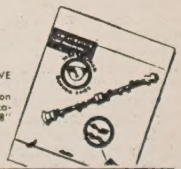
Equipped with the Iskenderian $40.00 rocker arm track grind cam Kenny Bigelow's hardy 270 GMC (bored to 300 cu. in.) produced these enviable results on the Tony Capana dynamometer. This engine installed in a 3200 pound 37 Chevrolet Coupe on its first two entries at the Santa Ana Acceleration Trials won the Coupe Trophy clocking 97.8 mph at the finish of ¼ mile, and has also clocked 133 mph in Dry Lakes competition. The above engine was built for a total cost of $350.00, which figures $1.40 per horsepower—an important feature to consider.

A special brochure prepared by Kenny Bigelow is available. It gives important facts on converting the GMC engine for racing or fast road car use. Be sure to ask for it when sending for our catalogue.

ISKENDERIAN RACING CAMS

SEND ONLY 25c FOR THE 1950 CATALOGUE & CALCULATOR

The most complete and informative booklet ever published on Racing Cams. Fully explained is "VALVE TIMING FOR MAXIMUM OUTPUT." Also gives speed hints on Ford and Chevrolet, applications and prices. Black cut-away illustration explaining the installation of the Iskenderian Mushroom Tappet V-8 Track Grind Cams, Engine Modifications and Dynamometer Results. Included with the booklet is "The Secret of Cooling the Ford V-8" and a wallet-size calculator for converting R.P.M. to M.P.H.



ED ISKENDERIAN

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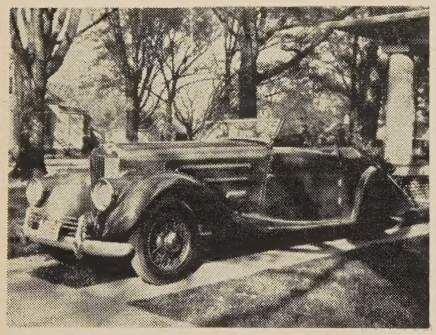
CORRESPONDENCE

ANDERSON MADE IN SOUTH CAROLINA

In your December issue I noticed that the article "Antique and Veteran" by W. Everett Miller failed to include, in its list of the cars made in the different states, the Anderson, which was made at Rock Hill, South Carolina, from 1917 to 1920. The Anderson (according to the article "South Carolina's Detroit" by Frances Eakes in the **State Magazine** for May 1, 1949) was responsible for the convertible and the foot dimmer for lights. By 1919 the company was quite successful, but the war boom burst forced it into bankruptcy in 1920. For further proof, I refer you to **Floyd Clymer's Scrapbook,** Number 3. On page 154 is a reprint of an ad of the Anderson Convertible.



Also, I am enclosing two pictures of my car, a 1937 custom-bodied DELAGE. If you publish these pictures, perhaps some reader could identify the company that made the body for this car. I think it is a Paris firm. The plates identifying the maker were lost when the car was restored.

Dillon, So. Carolina — Charles Hyman

SUPER SPACE SAVER

Just had to comment on your layout. Have just gone thru the Jan. '51 issue and suggest the following to give 7 additional pages to pictures and describe Foreign custom, sports and track cars.

KNOCK OFF PHOTOGRAPHY, ANTIQUE AND VETERAN, DESIGN FORUM & SKETCH PAD. We can best study Photography via 25c invested in a mag full of nude women. Join the Horseless Carriage Club of L. A. and save a page. It seems criminal to waste 2 full pages on rehashed hash-ish designs with all of Europe's finest waiting for Road & Track to portray.

WE JUST SAVED FOUR PAGES — — !

Now then, The Story Sports Car and the Buick article are both so over photographed with repetition that each could share a page.

JUST SAVED TWO PAGES — — — !

This one is a pet gripe . . . and I'm an artist — But who wants to stare at an arty layout full of white space when an Alfa or an MG-TC could be looking back at you. It would be a snap to gain another page by consolidation on pages 16 & 17.

JUST GOT ANOTHER PAGE! TOTAL GAINED SEVEN PAGES — — ! WOW!

No white space please—Vogue and Harpers are full of it. Let the MG-TD Boys buy the white space — Us TC Men want no part of it.

Seattle, Washington — Louie Nasmyth

By using extra-small type on your letter we saved still more space — Yipe! —Ed.

M.G. FC ?

BRITISH M. G.
M. G. 1948, F. C. model, good cond. Priced to sell. Call SY. 7-3935

This ad has appeared in the **Pasadena Independent** for several days now. . . . Could this be a new series MG, or does it stand for **Fast Car?** I'd like to know, it could be that my TD is outdated by a new model or else, as some TC owners would say, it stands for **Tired Dog.**

Pasadena, Calif. — Alan D. Nelson

PRAISE FOR CROSLEY "HOT SHOT"

. . . keep plugging the "500's." However, I feel that you would see more action in this country if you worked as hard to promote our own Crosley class. Perhaps I am prejudiced because I own and drive a Hotshot, but I feel that for the person who does not have the facilities or perhaps even the ability to build his own car, the Hotshot offers more motoring enjoyment for $1,000 than anything else I know of. I have found my car to be dependable and economical for everyday use. With the stock engine it has enough performance to be interesting to drive and its cornering and braking characteristics are much better than the typical domestic automobile. With an I.T. blower the Hotshot will perform with cars of larger displacement and quite often give them a hard time. Apparently this was true in the Cypress Point race at Pebble Beach.

Altoona, Pa. — Ellsworth L. Hall

WHO COPIED WHO?

In your "Correspondence" section of the January, 1951, **Road and Track** you publish a letter from Raymond Loewy, who inferred that Mr. D. H. Ross plagiarized his Coupe de Ville design.

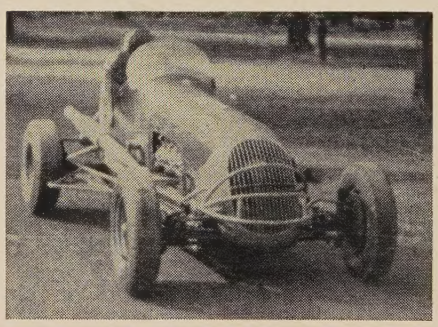
As far as I can see, the only thing Mr. Ross copied was the color line. If these two designs are studied without the similar color line you will find that they are as different as a Lincoln Continental (which is the basis of Mr. Loewy's design) and a Cisitalia. In fact, Mr. Loewy's design is far from original. The plastic canopy over the front seat was used by H. J. Mulliner on a 1939 Bentley salon. A very similar color system was used also on 1939 Bentley Brougham de Ville. Cuts of these two cars were published in October 1938 in the London Show Numbers of both **Motor** and **Autocar.**

Mr. Raymond Loewy has been in the design business long enough to know that all designs are not original but usually the modification or simplification of other designs or ideas and that a similarity will exist. However, if Mr. Loewy continues along the lines of 1950 and 1951 Studebaker he will have no worries about anyone copying his original (if they are) ideas.

St. Louis, Mo. — W. C. Hallenbeck

DISCRIMINATION AT WATKINS GLEN

Enclosing herewith a picture of a car which caused considerable controversy at the Watkins Glen Road Races this year. The car appears to



be an ordinary V-8 track midget but . . . the suspension has been "squared up," making it suitable for road use. It was detuned by lowering the compression to 7¾ to 1, and by installing a regular three-speed transmission together with a 3.78 to 1 rear axle. Steering was made less sensitive by shortening the Pitman arm, which resulted in a very fine handling road car with a power-to-weight ratio of approximately 12 lbs per hp. Amazing acceleration, with a top speed in the neighborhood of 105 mph, seemed to indicate that this car, if properly driven, would make very stiff competition on a circuit such as Watkins Glen. A locked rear axle was retained to minimize any effect of the right rear wheel rising on the righthand turns. The car weighed about 990 lbs. (exclusive of driver) and was equipped with four-wheel hydraulic brakes (50-50) actuated by a master cylinder operated by a hand lever in traditional track fashion, resulting in excellent braking characteristics. This car was raced in a regular ARDC circuit in 1947 and 1948 with a better-than-fair record prior to the changes described above.

After properly entering this car in the Seneca Cup (unrestricted category) Race and applying for registration with the SCCA, I contacted several officials . . . to make certain that this car would be eligible to compete. I was assured by letter that the car was eligible provided that it could pass inspection at Watkins Glen. The written regulations, promulgated by the Contest Board of the SCCA, provided that the aforementioned technical inspection would apply only to items of safety and construction and not to items of design or engineering, which the same Contest Board feels unqualified to pass upon.

With this information, the car was transported to Watkins Glen, a distance of 520 miles round trip, and presented for technical inspection. The car was passed thru inspection satisfactorily except for a minor toe-in adjustment. This adjustment was made and when the car was returned for inspection all the inspectors were out to lunch, whereupon I seized the opportunity to make a few practice laps around the course. In spite of the fact that the roads were not closed and that the speed thru the main street had to be kept down to about 25 mph, one lap was timed in well under six minutes, which made me quite happy. Acceleration on the long hill enabled me to pass two XK-120's and many MG's easily. Upon returning to the inspection station the toe-in was checked and the technical inspector then told me that he would be unable to pass the car, since it had no foot brake and this was against regulations. Since I was well aware that no such regulations existed, I asked him to quote them to me, and . . . (two of the members) felt that the car could not be safely driven in a road race without a foot brake. They further admitted that their decision was arbitrary and not covered by any regulations, and in fact was in violation of the written statement of the Contest Board stating that items of design and engineering would not be judged, but felt their decision was in the interest of safety. Of all the men present, the only one in my opinion who did not seem prejudiced before the hearing was Mr. William Milliken, who seemed to weigh fairly the matter at hand. The decision to arbitrarily disqualify this car was the more amazing when the following points are considered:—(1) **None of the members of the Contest Board ever saw, let alone inspected the car,** previous to arriving at a decision. (2) All of the members on the Board admitted **they had never driven a race car with a track type hand brake** and therefore were unfamiliar with its characteristics. (3) All of the persons involved in making this decision had cars entered in the race and **three of them were actually driving in the race.**

While I do not seek to make allegations, an admittedly arbitrary decision to disqualify my car from a race made by a board of four men, **none of whom could be disinterested in the competition which may have developed from this car,** hardly seems the proper thing. A staunch SCCA member up until now, I find myself wondering whether the charges which have been made against this organization and its "cliques" are not without foundation. There is no question that the few laps turned by this car in practice caused considerable comment among the spectators about the fact that it was a "hot" car, and many remarks were heard to the effect that "now the foreign jobs will get real competition from an American car."

Conversion of this car involved considerable expenditure of time and money, which was lightly dismissed at the Contest Board hearing. While I realize that such an expenditure may be of small consequence to . . . (some members), it is far from small to the large majority of men like myself who are interested in road racing but do not have (large) financial resources.

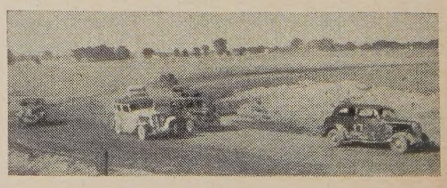
As it turned out, this car would have been withdrawn from the race in the third lap when it started to rain, since we were running smooth track tires and had decided to immediately discontinue in case of rain.

This experience . . . caused me to wonder whether the running of so important an organization as the SCCA is in the proper hands.

Suffern, New York — G. Vilardi

AUBURN V-12 IN STOCK CAR RACE

I'm enclosing two shots taken this season at Lansing, Michigan. Both are of a '33 Auburn



V-12 which is run in the strictly stock races there. It does very well against nearly all Ford competition. The afternoon these were taken it placed second in the pursuit and main.

Detroit, Michigan — Harry Chapman

CORRESPONDENCE

NASH LIMITED

Re: "Nash the Progressive" in the December issue, don't forget the Nash Limited that appeared in May of 1940.

It had a convertible club coupe body on the Ambassador 8 chassis. The doors were cut down like a Packard Darrin and padded with a roll of leather. It was 53 inches from ground to top of roof and 207 inches bumper to bumper. The whole car was lowered to the ground several inches. All this lowering and cutting reduced the wieght 150 pounds. Sakhnoffsky designed it. The top speed was 95-100 mph. A tachometer was included in the instrumentation.

Besides the one that was shown in Boston on May 28, 1940, I've seen only a picture of one being used in South America.

Essex, Mass. Hayden R. Shepley

FIRST NASH OHV IN 1917

I wish to challenge a statement made by John Bond, your technical editor, in his column of December Road and Track.

In tracing the history of American automobile powerplants, Bond stated that the first ohv Nash engine was produced in 1939.

The first Nash, put out in 1917 after Charles W. Nash took over the Jeffery company, was powered by a six cylinder ohv engine of 3¼" bore and 5" stroke. Nash has included an ohv model in their line ever since.

Grain Valley, Missouri Donald R. Elliott

MG VS. MOTORCYCLE

I received the November issue of Road and Track yesterday and immediately stumbled across Halbert F. Speer's letter to you on Motorcycles vs. Cadillac-dodging MGs.

As a motorcycle rider for a number of years, (both American and foreign) and the present owner of an MG TD series Midget, I am of the opinion that Mr. Speer has missed his check point somewhere along the line.

I will agree with him on one point, however. There is no feeling quite like that of being in command of a high-performance motorcycle. There is, too, no feeling quite like that of sitting behind the wheel of a high performmance sports car.

I urge Mr. Speer to pick a road, dirt or paved, that he would enjoy riding his bike over, then borrow someone's MG and drive the course, hard!

If Mr. Speer will visit southern Indiana I have a wonderful blacktop road in mind that I would be happy for him to drive my car over. He should remember that these are not "Just cars" but "Sports Cars."

Newburgh, Indiana C. J. Collins

TWO DIFFERENT 1903 FORDS?

In your February issue you have a 1903 Ford as the Cover Photo; on page six of the same issue you have a paragraph written about the car and who the owner is.

I have studied the cover photo and fail to see the rear seat that had to be re-upholstered. It appears to me that the writer has his wires crossed between the cover photo and the photos on page six.

El Paso, Texas W. C. Phillips

The 1903 Ford featured an easily removable rear seat, the cover photo having been taken with same removed, as well as the baskets.—Ed.

FULLY EQUIPPED PONTIAC

I own a 1949 Pontiac convertible with Hydramatic and I believe it is the slowest car on the road, that includes hiways and dirt roads, with bicycles and tricycles. I am always reading what people can do with Fords, Oldsmobiles, Mercurys, etc.

But what can I do to my car to make it go faster and look nicer, something like a custom made job, shall we say?

I have everything but the kitchen sink hanging onto it. That means everything . . . twin spot lights, fog lights, old style Cad fins, hi-compression head, back-up lights, dual exhausts, chimes, rear seat speaker (portable), Leopard skin seat covers, fender skirts, chrome extensions, plus regular equipment and still it doesn't look like much.

So I am calling for help, and hope I get it, and any help I do get will be greatly appreciated.

I remain in reverse (so it seems)

Quincy, Illinois Cecil L. Unglesba

Pontiac will have a hot V-8 in '52. Or, install a Cad engine, or buy an Olds.—Ed.

ROAD and TRACK

The Motor Enthusiasts' Magazine

WAR CLOUDS

The international crisis threatens to bring many changes to the automotive scene. War production has already reduced automotive output and even more drastic cuts are expected. We have not yet fully recovered from the serious deterioration of transportation during World War II so it is unlikely that civilian production will be entirely halted unless the situation is extremely critical.

The "freezing" of aluminum, magnesium, chromium, and hi-alloy steels has already begun to affect the speed equipment manufacturers. Many are using their shop facilities for war production and others will follow as their material supplies are exhausted. Skilled man power is also being rapidly absorbed by war industry and the services.

As during the last war, gasoline rationing, shortages and entertainment restriction may halt all professional racing. Management of the Indianapolis Speedway have already estimated that this may be the last "500" for the duration. Sports car racing and other amateur motor sports events will surely be restricted.

It's later than you think . . . if you want to buy a car or equipment, participate in or see motor sports—do it now!

MERCEDES TEAM IN S. AMERICA

We have been informed by reputable German sources that Mercedes will definitely take part in two South American races this year. Team Manager Neubauer and three Mercedes type 163 race cars have left Germany en route to Argentina.

The famous German pre-war Grand Prix star, Hermann Lang, and the post-war German formula II maestro, Karl Kling, will drive. Dr. Farina may possibly be the third team driver. The first race is scheduled for February 15th.

If Neubauer should decide to enter the Mercedes team in the "500," it would greatly enliven the "Offenhauser Race" and would be a very powerful drawing card. . . . Wilbur Shaw please take note!

EARLY ISSUES OF ROAD AND TRACK

The June 1947, May 1948, June 1948, and August 1948 have now become very rare. To assist enthusiasts who wish to complete their collection, write to *Road and Track* if you have any of these issues for sale or know where any are available.

The only back issues now available from this office are those from February 1950 to date, and February 1949.

Cover Photo

Alfa Romeo, a magic name in racing and sports cars, and Pinin Farina, one of the world's finest coach builders, have combined to bring us this beautiful Super Sports Coupe. The 2½ litre dohc Alfa engine develops 110 hp, giving a top speed of over 100 mph. This Italian car is an excellent example of fine craftsmanship.

March, 1951 **Vol. 2 No. 8**

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Kable News Co. ..... Mt. Morris, Ill.

ROAD and TRACK is published monthly by Enthusiasts' Publications, Inc., 540 W. Colorado Blvd., Glendale, California. Phone CHapman 5-2297. Entered as second class matter at the post office at Glendale, California, under the Act of March 3, 1879.

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Subscription price $3.50 per year thruout the world. Single copy 35c.

Change of address—must show both old and new addresses.

Contributions—not responsible for the return of unsolicited manuscripts, photographs, and/or drawings unless accompanied by self-addressed stamped envelope.

Mailing address—Box 110, Glendale, California.

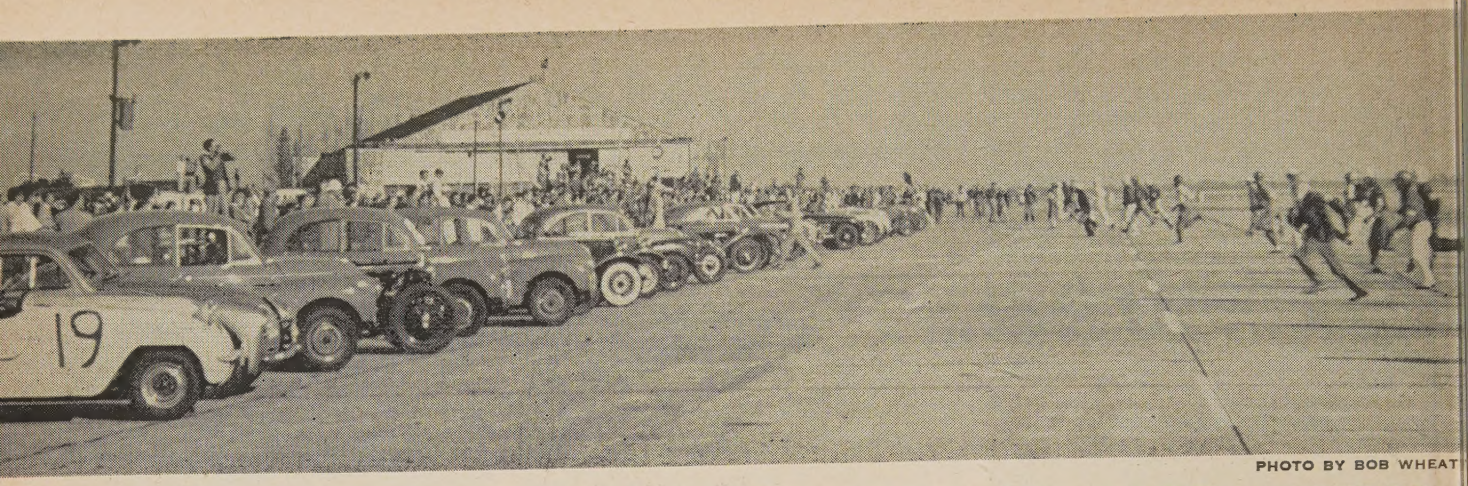


PHOTO BY BOB WHEAT

SAM COLLIER MEMORIAL GRAND PRIX

PHOTO BY JACK CANSL

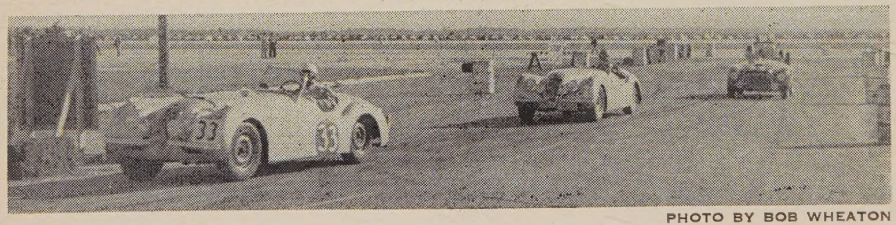


PHOTO BY BOB WHEATON

Two Jaguar XK-120s lead Kimberly's Ferrari thru the tricky S-turn. Marshal's car follows.

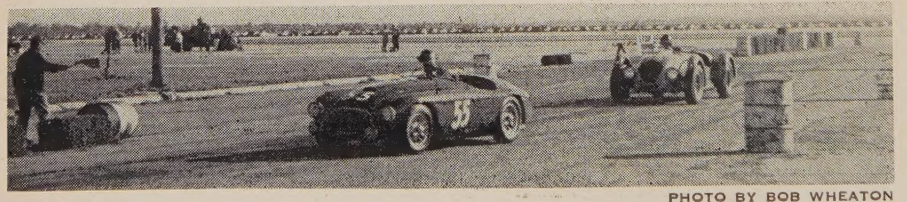
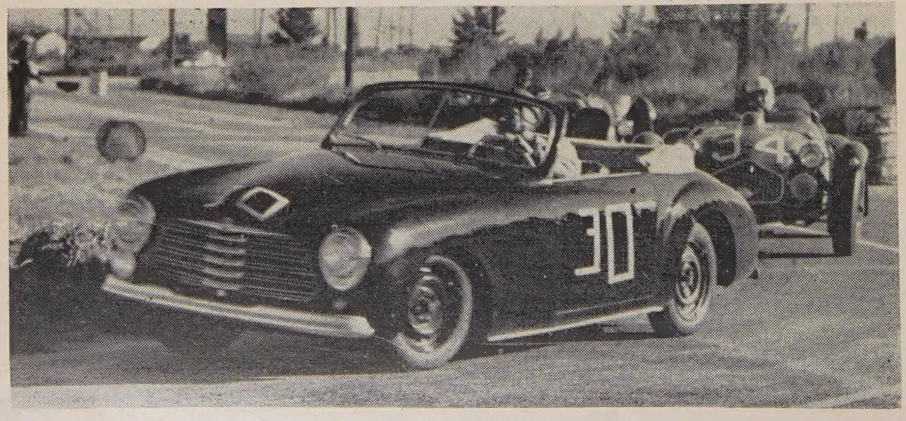


PHOTO BY BOB WHEATON

Above, Kimberly's Ferrari (#55) leads Cad-Healey thru S-turn. White barrels mark course. Below, John Bentley (Simca) leads Goldschmidt (Allard) and Walters (Healey) around corner.

PHOTO BY JACK CANSLER



by George Huntoon

The finest field of Sports Cars ever assembled for an event in the United States was lined up on the runway of Sebring Airport, Sebring, Florida, on Sunday afternoon, December 31, with engines dead, waiting for the stroke of 3:00 PM. The six-hour race, on handicap starting at that time and ending at 9:00 PM at night over an unlighted circuit, was to give each machine three hours of day and three hours of night driving under typical road conditions. The only lighting allowed on the circuit was in the pit area. A thoro technical inspection of each machine had been completed the day before. Both drivers and co-drivers had run the required 5 laps of day and 5 laps of night practice, under the watchful eye of the Stewards. During the night practice, headlights were adjusted and extra lamps added if necessary. This event, under the LeMans (France) rules, required all tools and spare parts to be carried in the car during the event. The only exception was that jacks, a few minor items and extra tires and wheels were permitted in the pit. If a car broke down and needed adjustment or a spare part, the necessary tools or parts had to be carried in the machine. The event was limited to production sports cars meeting the International Automobile Federation's specifications. Altho pit stops could be made at any time, no gasoline, oil or water could be taken on by a car until it completed 30 laps. No special fuels were permitted and all cars were required to use identical gasoline. This was a 91 octane gas donated by the Pure Oil Company. The tank of each car was drained, filled with the gasoline from the Pure truck in the pit area, and each filler cap sealed with leaded wire under the supervision of a Pit Marshal.

On the dot at 3:00 PM the green flag fell and the 28 drivers, lined up and waiting across the course from their cars, rushed in a mad footrace to be mounted and away. Safety belts had to be fastened and engines started. Phil Walters in the big blue Cadillac-Healey was the first out and within 60 seconds not one car was left in the pits. Ten seconds later the crowd of over 8,000 could only tell the location of the field by that high scream of exhausts as the pack rolled thru the inner part of the circuit. The big cars and the three Ferrari soon separated themselves from the group with the smaller displacement machines falling to the rear. The field settled down to fast but steady driving as they had six hours yet to go.

This type of race is entirely different from anything ever before run in the United States. The Handicap system allows a licensed competition member of the S.C.C.A. to enter and drive whatever type of car he may have as long as it complies with the regulations for being a production sports car. A handicap based on engine size is computed from the LeMans formula adjusted for the shorter race. Theoretically, this gives the smaller cars the same opportunity to win as the large engined cars. The result of the race proves that, as the one lone Crosley with its big handicap was never headed on HANDICAP INDEX, which determined the leader. (For those interested in the LeMans formula and the method of handicapping at the Sebring event, a short explanation may be found on page 30. On page 7 are the complete and final results with make of car, drivers, engine sizes, the Handicap Mileage and the final Handicap Index determining the winner to be the Crosley Hot-Shot.)

THE RACE

First Hour (3:00 to 4:00 PM)

After the start the field quieted down to a mere howl of exhausts and the first retirement during this hour was after the 8th lap when the special-bodied Volkswagon pulled into the pits blowing compression all over the place. The little rear-engined car had been giving a fine account of itself under Hildebrand's guidance until the mishap.

Standings at the end of the first hour

Position	Car No.	Make	Handicap Index	Drivers
First	19	Crosley	.1710	Koster & Deshon
Second	55	Ferrari	.1635	Kimberly & Lewis
Third	20	Fiat	.1631	Keller & Farago
Fourth	34	Cad-Allard	.1591	Goldschmidt & Cole
Fifth	1	MG "TC"	.1579	Van Driel

Second Hour (4:00 to 5:00 PM)

The only retirement in this hour was the cream-colored hope from the Lone Star State, the Mercury-Allard driven by Beeler and J. Cunningham. The rest of the field has reduced lap times slightly and were running steadily but a few haybales were getting nicked in the excitement. Several rugged exhibitions of dicing in the slower corners were giving the Roving Marshalls some concern, and the crowd began to move over from the long straights (where the Cadillac-Allards were hitting as high as 130 mph) to the slower, twisty inside circuit. The long straight where the big cars hit over 120 mph ran directly into a 180° hairpin bend which could not be taken at more than 30 mph. It took its toll on brakes.

Standing at the end of the Second Hour

Position	Car No.	Make	Handicap Index	Drivers
First	19	Crosley	.3534	Koster & Deshon
Second	20	Fiat	.3370	Keller & Farago
Third	55	Ferrari	.3269	Kimberly & Lewis
Fourth	10	Ferrari	.3269	Spear & Roberts
Fifth‡	1	MG "TC"	.3263	Van Driel
Fifth‡	3	MG "TC"	.3263	O'Hara & Millikin
Fifth‡	32	MG "TD"	.3263	Brundage & Cook

(26 cars still running)
(‡ tied positions)

Third Hour (5:00 to 6:00 PM)

The crowd saw some hard but excellent driving by Wacker in the Cad-Allard with Hydromatic shift. Pit stops were being made by many of the cars as the 30 required laps had been completed by most, and gas, oil and water could be taken on. Luigi Chinetti in the Mille Miglia Ferrari Coupe barely made it in for oil, having had a main bearing go. Luigi had plenty of oil in the pits and kept going for the fun of it, altho it was then a lost cause. They must have used about 36 quarts of oil all told. Just before the hour, the Goldschmidt-

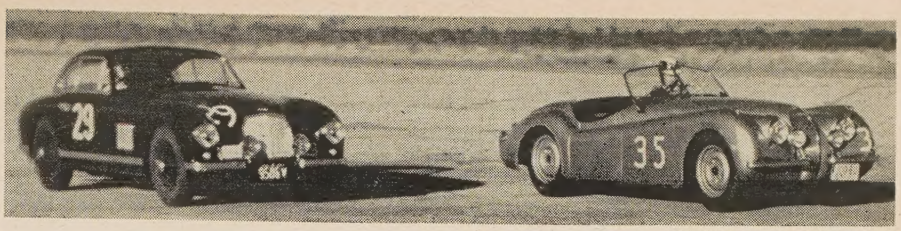


PHOTO BY JACK CANSLER

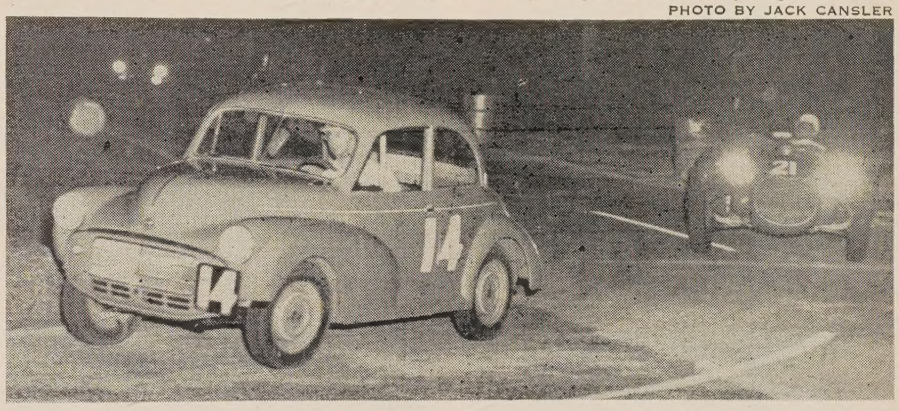
Tom Braun, on Jaguar XK-120 (#35), is pursued by C. Wheaton on Aston-Martin DB (#29).

PHOTO BY JACK CANSLER

M.G. Powered Morris Minor #24 (Ferguson) leads Crosley Hot Shot #19 (Fritz Koster).

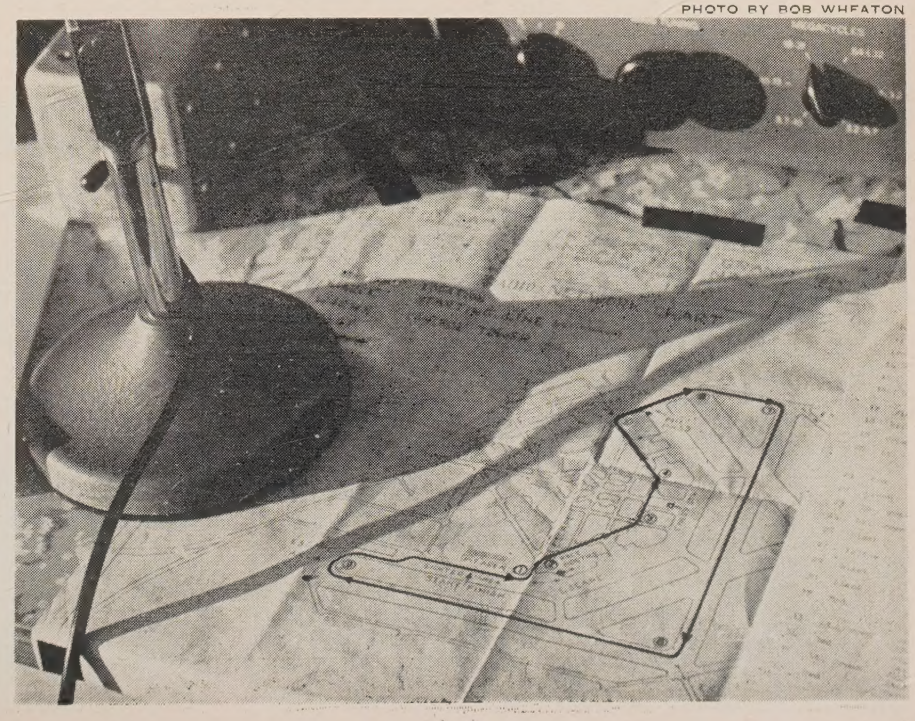
Morris Minor #14 (M. G. Thomas), and Cad-Allard #21 (Gene Davidson) negotiate turn.

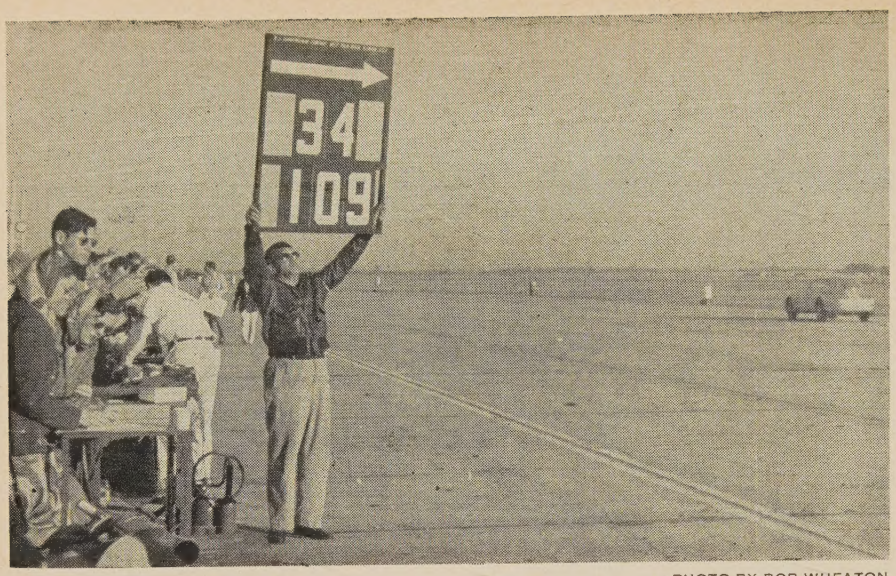
PHOTO BY JACK CANSLER



Route of race over airport runways and camp streets is shown on map used by radio control center. 3½ mile road circuit had two .9 mile straights. Each circle indicates a flagman.

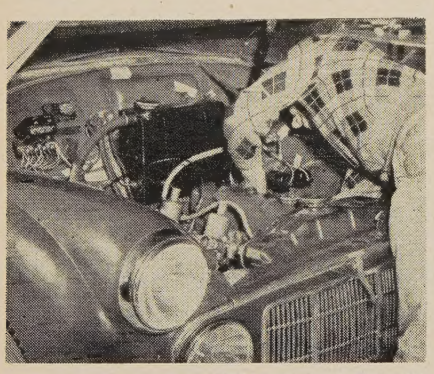
PHOTO BY BOB WHEATON





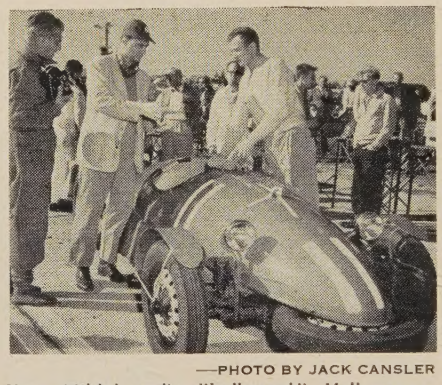
—PHOTO BY BOB WHEATON

The Briggs Cunningham crew signals the Aston-Martin in professional fashion. Note legible sign.



—PHOTO BY JACK CANSLER

Yes, it's possible! MG installation in Morris.

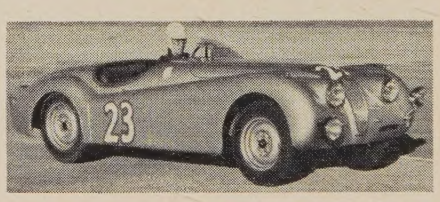


—PHOTO BY JACK CANSLER

Kurt Hildebrand's "belly-tank" Volkswagon.

—PHOTO BY JACK CANSLER

Phil Walters in the Cad-Healey Silverstone.



—PHOTO BY JACK CANSLER

John Fitch in fastest Class C car, an XK-120.

—PHOTO BY BOB WHEATON

At left, Cad-Allard takes on fuel and a tire during night pit stop. Note spilled gasoline on tail pipe.

At right, the Crosley speeds by fluorescent sign indicating turn.

Cole sleeved Cadillac-Allard caught fire under the dashboard. The incident took place around the turn from the pits, near corner 2. The assistance of the mechanics was required to extinguish the blaze, thereby disqualifying the car. (LeMans regulations do not permit a mechanic to work on the car unless it is in its designated pit area).

Standing at the end of the Third Hour (6:00 PM) "Lights On"

Position	Car No.	Make	Handicap Index	Drivers
First	19	Crosley	.5242	Koster & Deshon
Second	20	Fiat	.5109	Keller & Farago
Third	55	Ferrari	.5000	Kimberly & Lewis
Fourth	1	MG "TC"	.4842	Van Driel
Fourth	3	MG "TC"	.4842	O'Hara & Milliken
Fifth	16	Cad-Healey	.4828	Walters & Frick

(25 cars still running)

Fourth Hour (6:00 to 7:00 PM)

The last trace of twilight was disappearing from the western sky as the pit area flood lights went on at six o'clock to signal all cars to start using headlights. About 6:30 PM, the Kimberly pit gave its Ferrari # 55, then driven by Lewis, the speed-up signal. They had figured that a cut in lap time would raise the Ferrari's index enough to pass that of the Fiat and Crosley. The Koster and Deshon pit caught this increase in speed with their stop-watches and immediately sent the word out to the little yellow Crosley Hot-Shot via blackboard. At the end of this hour the results showed that the Ferrari had passed the Fiat (Keller & Farago) by Index but still lay behind the Crosley who had made only one pit stop to take on 4½ gallons of gas (no oil or water required—tires were in fine shape). The Ferrari made one tire change, as did several other machines during this period.

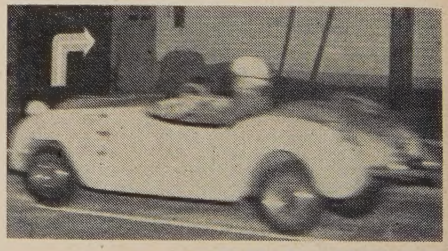
Standing at the end of the Fourth Hour 7:00 PM)

Position	Car No.	Make	Handicap Index	Drivers
First	19	Crosley	.7194	Koster & Deshon
Second	55	Ferrari	.6827	Kimberly & Lewis
Third	20	Fiat	.6739	Keller & Farago
Fourth	10	Ferrari	.6539	Spear & Roberts
Fifth	21	Cad-Allard	.6522	Davidson & Weaver
Sixth	1	MG "TC"	.6421	Van Driel
Seventh	17	Ferrari	.6415	Chinetti

(23 cars still running)

Fifth Hour (7:00 to 8:00 PM)

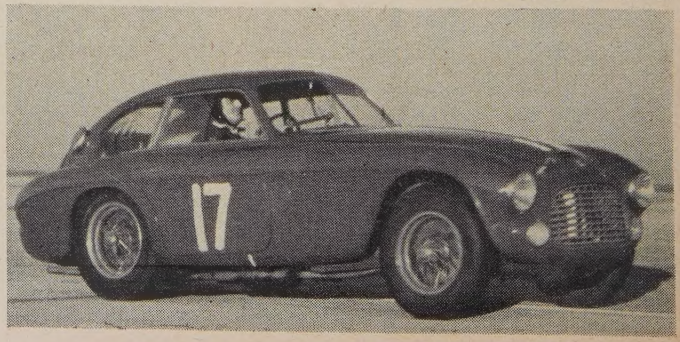
On the unlighted parts of the course a wonderful sight was provided by the cars screaming by with headlights blazing. Chinetti's Ferrari was easy to spot as it had the yellow lamps required by French regulations. As you will note above, Ferrari # 10, driven by Spear & Roberts, had slipped up into 4th place at the end of the last hour. As other cars cut lap time, the Ferrari, with Roberts doing the night driving, dug in right after them. Some of the Jaguars' brakes were failing rapidly by this time but John Fitch and Whitmore, in Jag #23, brought their machine up from 22nd to 17th place in one hour and held that position to lead the Class C cars in.



—PHOTO BY JACK CANSLER

Master of endurance races, Luigi Chinetti, at speed in the 2.3 Ferrari.

—PHOTO BY JACK CANSLER



Standings at the end of the Fifth Hour (8:00 PM)

Position	Car No.	Make	Handicap Index	Drivers
First	19	Crosley	.8902	Koster & Deshon
Second	55	Ferrari	.8654	Kimberly & Lewis
Third	20	Fiat	.8479	Keller & Farago
Fourth	10	Ferrari	.8270	Spear & Roberts
Fifth	1	MG "TC"	.8210	Van Driel
Sixth	17	Ferrari	.8208	Chinetti

(23 cars still running)

Sixth Hour (8:00 to 9:00 PM)

The big cars, as well as all smaller faster machines, were now making a frantic bid to get the last ounce out, regardless of tire, engine or brake wear. Two more haybales were banged and reported by the radio net at each corner. These cars were flagged in for inspection of damage before being allowed to proceed. The Crosley still held its lead over Kimberly's Ferrari and barring a breakdown or crash, the last 15 minutes looked as tho the previous hours' standing would be the finish order. On the dot of 9:00 PM the fiery sky-rocket signalling the end of the race exploded in the sky and those machines still running were allowed four minutes to which to obtain credit for the final lap. The little Crosley Hot Shot had won, followed by the Kimberly Ferrari, then the Keller Fiat and the Spear Ferrari. The MG "TC" driven solo by Van Driel had made a superb showing by coming in fifth. Van Driel gave a smooth performance and his minimum of pit stops did a lot to keep up his high index.

NOTES AND COMMENTS

In all, the Sebring Handicap was one of the finest exhibitions of driving ability and headwork by drivers and pits that we have had the opportunity to witness. As these teams became more familiar with the Handicap type of race, it would be reasonable to expect an even higher quality. The coolness of the night air had a lot to do with keeping down tire wear and the scorers reported only five pit stops by cars for tire changes, altho there may have been a few more. The larger bore machines, with greater speed and acceleration, obviously took more out of the tires than did the smaller cars, which were limited to a top cruise of 70 - 90 mph. These did not have to brake down so severely from the back stretch into the hairpin turn as did the faster machines. Each man had to judge the amount of wear and tear his brake linings and engine would stand for the six hours. Gas consumption was another worry that kept the crews figuring, as pit stops would cut the Index figure.

The little Morris Minors tootled around with abandon, each with the accelerator flat on the floor. The crowd was impressed by the reliabilty and stamina of these small cars. One Morris driver, when reaching the long fast, back stretches, took the opportunity to shift his driving position and would reach out and hang on to the rain gutter with one hand, only removing it to stifle a yawn. The Aston-Martins were handicapped by not having more than a mile in which to get up to the 120 which they can reach. At the finish # 29 Aston-Martin, driven by Wheaton, had only

(Continued on page 30)

FINAL RESULTS
6-HOUR LE MANS TYPE HANDICAP RACE

Place	Car No.	Make	Disp. cc	Class	Handicap Mlge	Laps Plus 1	Final Handicap Index	Driver
1	19	Crosley	724	H	288.3	89	1.0854	Koster & Deshon
2	55	Ferrari	1995	E	363.6	108	1.0385	Kimberly & Lewis
3	20	Fiat	1086	G	323.4	95	1.0326	Keller & Farago
4	10	Ferrari	1995	E	323.4	106	1.0102	Spear & Roberts
5	1	MG "TC"	1250	F	334.1	95	1.0000	Van Driel
6	3	MG "TC"	1250	F	334.1	94	.9894	O'Hara & Milliken
7	17	Ferrari	2340	D	371.8	104	.9811	Chinetti
8	8	Cadillac-Allard	5424	B	401.7	111	.9653	Wacker & Burrell
9	25	MG "TC"	1098	G	324.3	89	.9570	Keith & Wilder
10	21	Cadillac-Allard	5424	B	401.7	109	.9479	Davidson & Weaver
11	24	Morris-Minor	1140	F	327.3	89	.9438	Fergusson
12	16	Cadillac-Healey	6380	B	405.1	109	.9397	Walters & Frick
13	22	MG "TD"	1250	F	334.1	89	.9368	Viall & Charlwood
14	5	Morris-Minor	918	G	309.7	80	.9091	Brocken & Whiting
14	12	Morris-Minor	918	G	309.7	80	.9091	Gegen
15	9	Aston-Martin	2580	D	376.5	97	.8981	Rand & Marshall
15	18	Aston-Martin	2580	D	376.5	97	.8981	Briggs Cunningham
16	23	Jaguar XK-120	3442	C	388.0	98	.8829	Fitch & Whitmore
17	14	Morris-Minor	918	G	309.7	79	.8768	Thomas
18	15	Cadillac-Allard	5425	B	401.7	97	.8435	Lee & Gray
19	30	Simca	1221	F	332.4	79	.8315	Bentley & O'Shea
20	33	Jaguar XK-120	3442	C	388.0	90	.8108	McIntosh & Doyle
21	29	Aston-Martin	2580	D	376.5	85	.7870	Wheaton & Dillnutt
		DID NOT FINISH IN REQUIRED TIME						
24	32	MG "TD"	1250	F	334.1	67	.7052	Brundage & Cook
25	35	Jaguar XK-120	3442	C	388.0	54	.4865	Braun & Hassen
26	34	Cadillac-Allard	4422	C	396.1	50	.4425	Goldschmidt & Cole
27	27	Mercury-Allard	3918	C	392.3	39	.3482	Cunningham & Beeler
28	11	Volkswagon	1131	F	225.1	8	.0860	Hildebrand

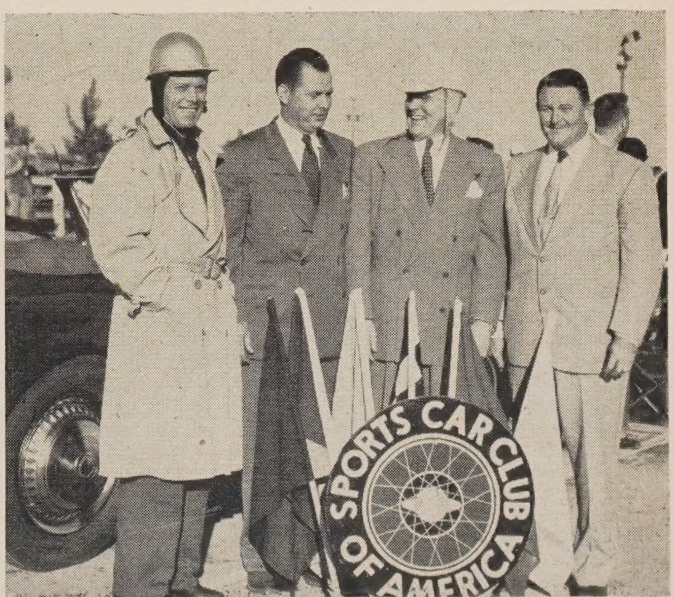
CLASS RESULTS

Class Position	Car No.	Make	Laps	Final Handicap Index	Drivers
		CLASS B			
1	8	Cadillac-Allard	111	.9653	Wacker & Burrell
2	21	Cadillac-Allard	109	.9479	Davidson & Weaver
3	16	Cadillac-Healey	109	.9397	Walters & Frick
4	15	Cadillac-Allard	97	.8435	Lee & Gray
		CLASS C			
1	23	Jaguar XK-120	98	.8829	Fitch & Whitmore
2	33	Jaguar XK-120	90	.8108	McIntosh & Doyle
3	35	Jaguar XK-120	54	D.N.F.	Braun & Hassen
4	34	Cadillac-Allard	50	D.N.F.	Goldschmidt & Cole
5	27	Mercury-Allard	39	D.N.F.	Cunningham & Beeler
		CLASS D			
1	17	Ferrari	104	.9811	Chinetti
2	9	Aston-Martin	97	.8981	Rand & Marshall
2	18	Aston-Martin	97	.8981	Briggs Cunningham
3	29	Aston-Martin	85	.7870	Wheaton & Dillnutt
		CLASS E			
1	55	Ferrari	108	1.0385	Kimberly & Lewis
2	10	Ferrari	106	1.0192	Spear & Roberts
		CLASS F			
1	1	MG "TC"	95	1.0000	Van Driel
2	3	MG "TC"	94	.9894	O'Hara & Milliken
3	24	Morris-Minor (MG eng.)	89	.9468	Fergusson
4	22	MG "TD"	89	.9368	Viall & Charlwood
5	30	Simca	79	.8315	Bentley & O'Shea
6	32	MG "TD"	67	.7052	Brundage & Cook
7	11	Volkswagon	8	.0860	Hildebrand
		CLASS G			
1	20	Fiat	95	1.0326	Keller & Farago
2	25	MG "TC"	89	.9570	Keith & Wilder
3	5	Morris-Minor	80	.9091	Brocken & Whiting
3	12	Morris-Minor	80	.9091	Gegen
4	14	Morris-Minor	79	.8768	Thomas
		CLASS H			
1	19	Crosley	89	1.0854	Koster & Deshon

—PHOTOS BY JACK CANSLER

Luigi Chinetti — Phil Stiles

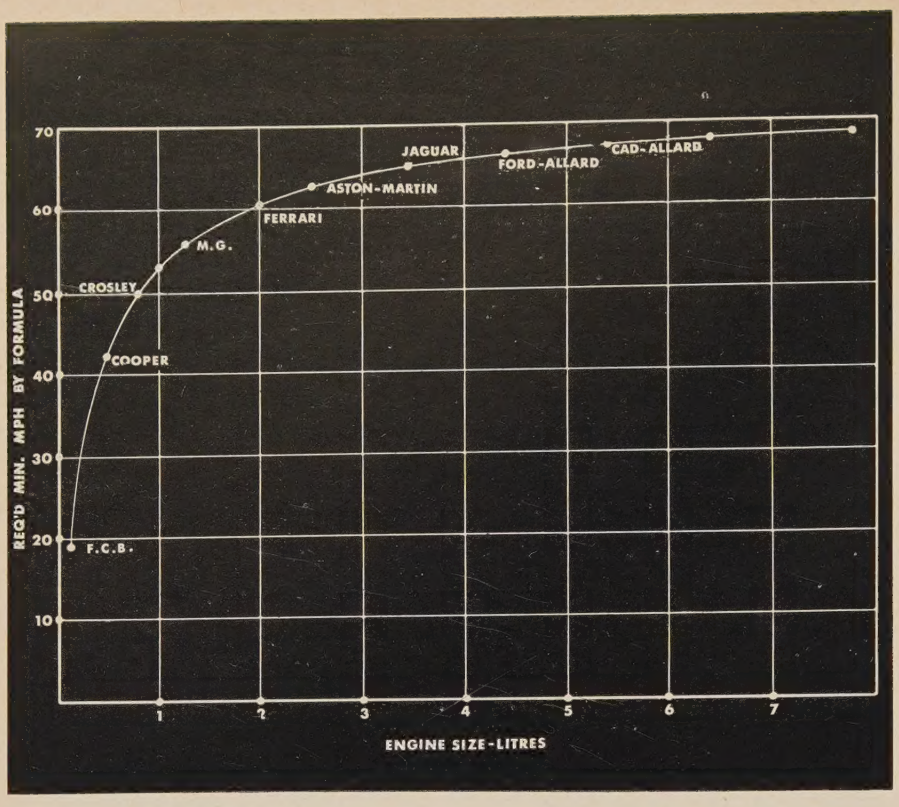
The prize-winning Kimberly crew.



G. Huntoon — C. D. Richardson, Jr. — Gov. Warren — Sen. Moore.

R. Dillnutt—C. Wheaton—Stiles

Bob Deshon — Phil Stiles



Formula chart showing required minimum speeds for Sam Collier Memorial 6-hour race.

Misc. Ramblings by the Technical Editor

A Crosley Hot Shot has finally won a major sports car event, and the victory was well deserved. The win may be a blow to many, but certainly not the SCCA rules committee who set up a formula for handicapping that seems far more logical than allowing bored and stroked Cadillac-Allards to have a field day.

The January, 1951 issue of *Argosy* magazine carries an article by Ralph Stein, describing his ideal sports car — well worth reading. Last month we tore GM's "Le Sabre" to bits and this new Stein proposal offers a perfect example of what a sports car really is, with no arguments. I would like to add my bit to comments on Le Sabre by suggesting that its conception gives a good insight into the distorted imagination of American stylists—from its violation of fundamental optical principles in the windshield to the useless jet tail cone at the rear. Inspiration? The incongruous looking rear fenders, with three feet of unnecessary overhang, are said to have come from the F-86 fighter plane. Why must an automobile look like an airplane?

In direct contrast to Le Sabre, the Stein specification is an out and out sports car, with a 3-litre (183 cu. in.) V-8 engine, twin overhead camshafts for each bank of cylinders, and a roots type supercharger, giving a 12 psi manifold pressure. The Wilson (epicyclic gearing) transmission has 4 manually selected speeds forward, and the brakes are large enough, and properly cooled, to do the job without fading. The styling is simple and functional, making no pretense of needing only wings in order to enter the Bendix Trophy Race. You can even "get at" the engine in this design, but Stein had better add doors if he wants to run in sanctioned sports car competition. Finally, Mr. Stein's realistic approach to the cost ($15,000 if just one is built, $10,000 in small production, and $4,000 to $5,000 each if built on large scale by large Detroit manufacturer) of such an ideal is most commendable — a Ferrari "America" costs over $12,000, for example.

The new Pontiac announcement contains one little noticed sidelight; namely, a change in method of engine rating, necessitated by the practice of competitors. Advertised bhp figures are now based on the SAE method instead of the more conservative (and logical) GM method. This has boosted the six from 90 to 96 bhp, and the eight from 106 to 116 bhp. A 5% gain can be attributed solely to correcting dynamometer data to 60° F air inlet temperature instead of the GM 103° F standard.

Have been hearing quite a few comments on the remarkable coincidence of frontal treatment on the 1951 Chevrolet and Plymouth. Also quite a few laments about the "gimpy" styling of the Cadillacs.

Cadillac production is now 100% equipped with Hydramatic drive. An important change has been incorporated in this transmission—a new hydraulically operated cone clutch for fool-proof reverse engagement. The new reverse clutch is also used on Hydramatics installed on Pontiacs and Olds, but no mention is made as to whether GM is supplying Lincoln, Hudson, Kaiser, and Nash with the new reverse control.

Chevrolet's 1951 Powerglide transmission incorporates a few "refinements" since its introduction last year.

People who say this or that gadget can be made standard equipment on cars at no extra cost should read a recent statement from Packard. The company invested $7,000,000 in facilities for manufacturing their Ultramatic drive, and to date, about 30,000 transmissions have been built, representing installation in over 85% of their total production. The interesting item is this: nearly 10% of all Packard employees work on the automatic transmission.

When things get dull, start a discussion as to whether a sports car engine should be a de-tuned racing model, or a modified production version. I would prefer to stay out of such discussions, (which can quickly become arguments) by suggesting that in general, neither arrangement has proved entirely satisfactory, unless given a few years of development experience toward improving reliability. However, the new "oversquare" engines (all ohv V-8's so far), designed for eventual compression ratios as high as 12 to 1, make this type appear most favorable.

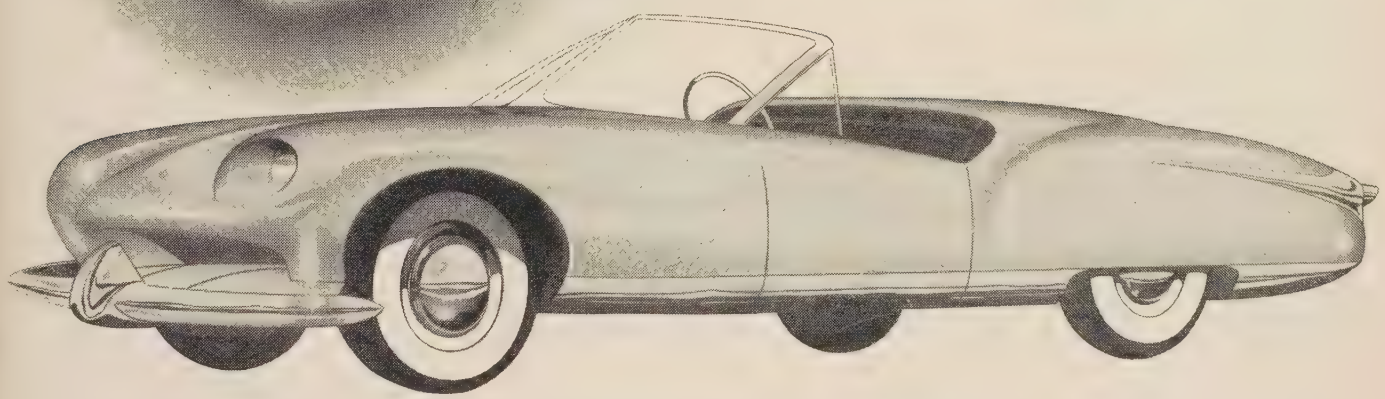
Tip for builders of specials . . . investigate the Zenith side draft carburetor. Zenith model #8810 is a single, has a 1¾ inch throat, and it is available with a variety of venturi and jet modifications. Naturally, the side draft can assist considerably in getting that low hood line without a "power bulge." I also like the inclusion of an accelerator pump, not found on most side draft carburetors.

Some people still think that torsion bar springing will effect a miracle in ride and handling qualities of a car. This is a fallacy because a torsion bar is a constant rate spring the same as a coil. Also, the use of semi-elliptic leaf springs at the rear of several American cars has many advantages over any other form of springing, not the least of which is the variable rate feature obtained from "shackle effect" of the so-called tension type mounting. Reference to the SAE handbook on leaf spring design shows that a rate increase of up to 50% is possible, and further, a very effective roll stabilizer can be included by the simple expedient of making the forward half shorter than the rear half.

The moral to this is, "don't sell American designers short"—they do a terrific job of getting results at low cost. Which reminds me of a conversation some years back—a well known race car engineer had been doing some development work for a large manufacturer. Knowing that most ideas for improvements are not considered due to cost reasons, I asked him how he liked trying to work out improvements that cost pennies instead of dollars. His reply was "pennies hell, they talk about mils!"

An interesting sidelight on dynamometer testing is that any data taken from a scale reading directly in BHP is totally useless, since such devices can be thrown out of calibration very easily—in fact, I am told readings can approach double the actual output.

Custom DESIGN FORUM



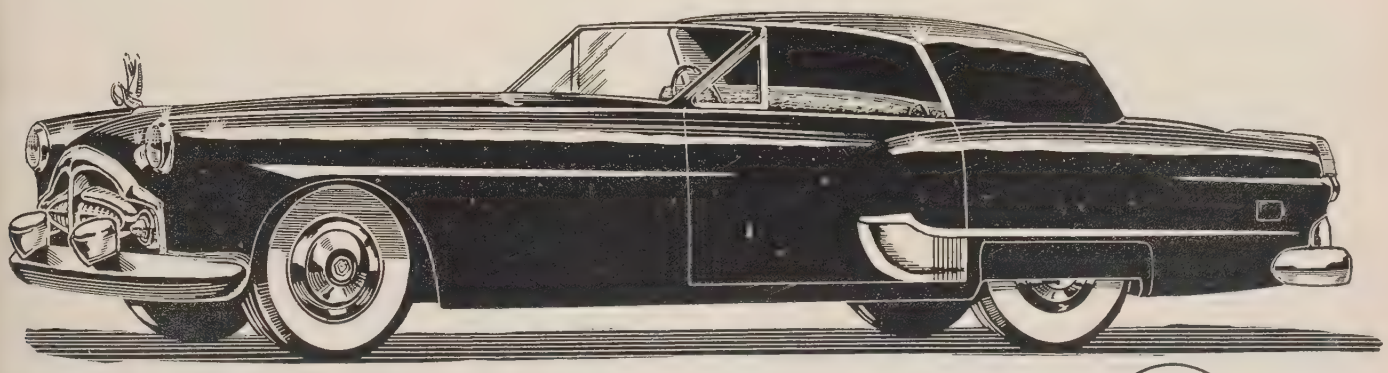
BARROS SPORTS CAR

American automotive stylists are currently "aircraft-happy." Spinners, rocket bulges, tapered noses, covered wheels, and jet tail lights are but a few of the silly embellishments being used. GM's greatly ballyhooed "Le Sabre" is a prime example of design which borrows everything from the airplane except straightforward aerodynamic cleanness.

The blending of streamlined styling and sports car design is, admittedly, very difficult. Special plaudits, therefore, should go to the winner of Design Forum for March, Joe Barros, an amateur car-builder and designer. Thru sheer simplicity and smooth lines, he has created a very pleasing "aerodynamic sports car." This design was the first version of a car he is now building. The frame is box section, power is a V-12 Lincoln, and wheelbase is 100 inches. Photos of the completed Barros Sports Car will appear in a future issue of *Road and Track*.

CONTEST

Each month *Road and Track* awards $15 to the entrant whose car design is judged most interesting. Mechanical or 3-view drawings as well as perspectives are acceptable.



SKETCH PAD — Jenks

1951 PACKARD COUPE DE VILLE

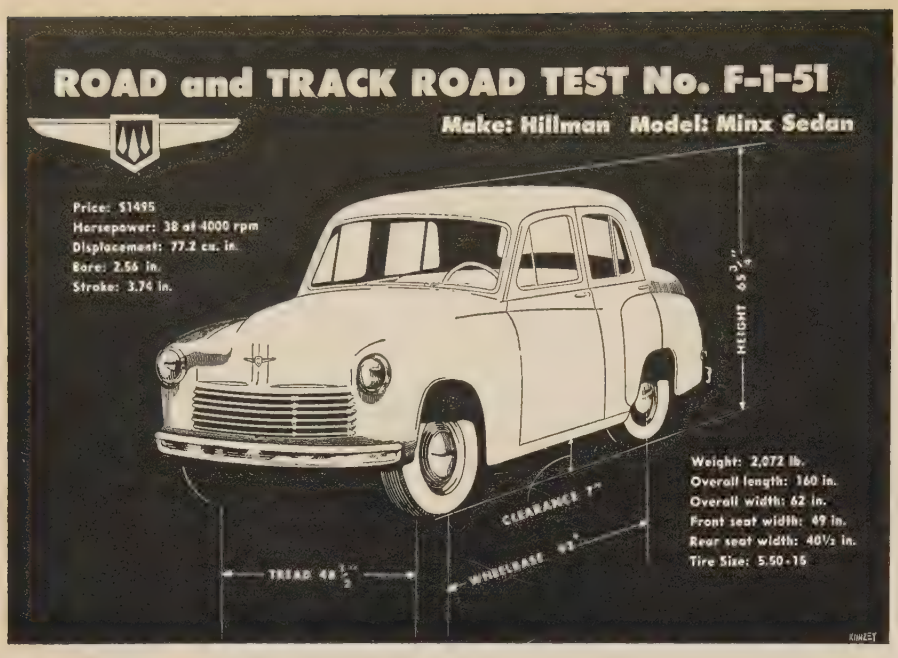
Do you want a *carriage d'elegance* in the 1951 manner? Do you like Packard? If so, Jenks has created just the car for you.

In years past, the Packard chassis was a prime choice for custom body adaptations. Many a famous family's selection was Packard.

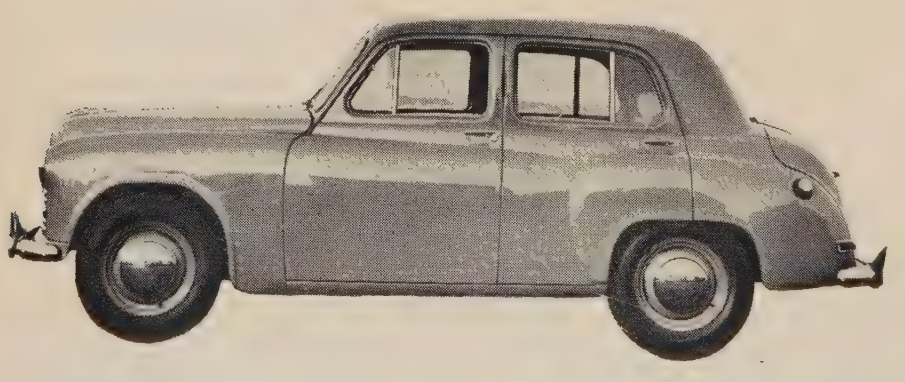
This year, with the "lower-than-fender hood line" and its 160 hp engine, Packard again becomes admirably suited for custom bodies. It is long and low and almost any variation of custom body styles could be adapted, using most of the original sheet metal. Fenders, hood and rear decks could easily be retained intact.

The close coupled 2-position coupe de ville body would produce a modern long-hooded, smart custom version, reminiscent of the huge, elegant specials of the past, but with a favorable power to weight ratio, extremely good visibility and with classic styling which would be modern for years to come. The hood line, except for a 22" added length (for those who still thrill to a long hood), remains unchanged and the deck is original. In this coupe de ville version, which is the artist's favorite body style, the *accoutrement* of the "Patrician" series fender has been removed in favor of less cluttered lines.

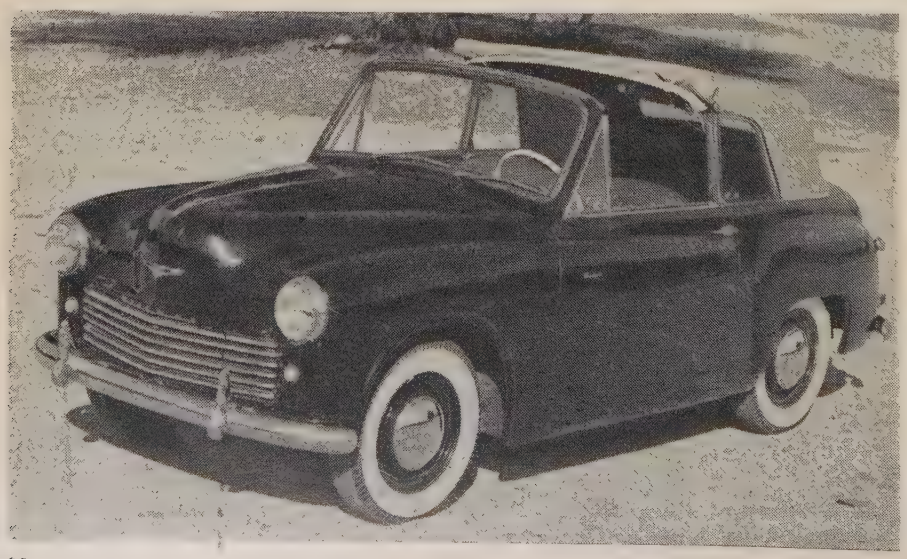
Incidentally, the building of this design, aside from the original cost of the car would not be as expensive as many lesser attempts, due to practicability of using most of the original sheet metal.



Inaugurating a series of road tests of foreign and American automobiles from the American driver's viewpoint



The convertible, below, is a welcome and good-looking addition to the Hillman line. Selling for $1745, it is an ideal car for the enthusiast who likes fresh-air. The 3-position top is shown partially opened. Quality of the top material is above average. PHOTO BY JACK CAMPBELL



When taking over the wheel of the Hillman 4-door sedan, in its latest Mark IV form, we tried to evaluate the car in a manner similar to the approach of an average American motorist. First of all, we thought, the prospective purchaser is interested in either a handier car for traffic, or in operating economy, or both, or he would not be considering the Hillman. This approach is, however, a mistake, for while the car has handiness and economy in abundance, it also is fully capable of long journeys with amazing comfort for 4 people at a steady cruising speed as high as 60 mph. The small four-cylinder engine is smoother and quieter than many current American cars, and while stop-light getaway is relatively tame, it is sufficient to keep up with ordinary American traffic without winding the engine to the limit on each gear.

Our first impression of the Hillman's appearance was, and still is, that it is one of the best. The job of styling a small car is recognized as being extremely difficult, and our personal opinion is that the Hillman is by far the best available today. Interiors are impressive, the high quality pleated red leather upholstery earning very favorable comment. Matching deep-pile carpets cover the floor. All controls were well placed (altho brake and clutch pedals were rather far to the right), and the front seat could accommodate three congenial people if required. All doors fit well and latched securely. Hardware is well designed except that a positive means of locking the rear doors when carrying children should be provided. Rattles were absent even on "washboard" roads. Switches and knobs all worked and evidenced no sloppiness. A convenient, and typically British, parcel shelf under the dash relieves the glove compartment load. Visibility thru the curved glass windshield and other windows is excellent. Lighting equipment is of good quality and is very complete.

Historically, the engine is 20 years old, with, of course, numerous refinements incorporated on the basis of experience. It is a straightforward, simple L-head design, having a moderate compression ratio of 6.6 to 1, and with a bore and stroke of 2-9/16 x 3¾, giving displacement of 77 cu in. (1265 cc), the output is 38 bhp at 4200 rpm.

The crankshaft is fully counterweighted, has three ample-sized main bearings, and is drilled for full-pressure lubrication. Of some interest is the fact that the OHV Sunbeam-Talbot "80" apparently has many common parts, including crankshaft, rods, and pistons.

The transmission system includes a conventional clutch and a remote control (steering column shift) for the 4 forward speeds provided. Gear ratios are admirably selected for USA requirements, with first gear required only for emergency use. The car starts smoothly and without excessive clutch slip in the 12.89 to 1 second gear, which along with third and high is synchronized.

The frame and body are combined into a unit structure to give the rigidity required when front suspension is independent, and the curb weight of 2072 pounds reflects the saving possible with such design.

As mentioned previously, the performance is satisfactory, especially in consideration of a power to weight ratio of 55 pounds per horsepower. The speedometer displayed the now-almost-universal (but still deplorable) optimism, approaching 10% (time did not permit a full re-calibration check). However, the top speed was 68 mph, with the speedometer showing slightly beyond the last calibration mark of 75. Using the gears to best advantage, the acceleration time from zero to an honest 60 mph took an average of 40.0 seconds, and the standing start ¼ mile was covered in 25.0 seconds.

The theoretical cruising speed works out at 58 mph (about 63-64 mph on this car's speedometer) based on 2500 fpm piston speed and using 5.50-15 tires. In second gear, a maximum of 33 mph could be reached, corresponding to 5600 rpm, while 3rd gave 54 mph (a reading of nearly 60) at 5500 rpm. At these speeds a slight engine vibration was noticed, probably caused by the commencement of valve bounce. At 5000 rpm the engine is beautifully smooth and quiet, corresponding to actual usable speeds of 49 and 29.5 mph in 3rd and 2nd, respectively.

To get right into a strange car and almost immediately feel at ease is unusual, but quite possbile with the Hillman. Visibility is excellent, and the steering is unquestionably one of the best ever tried by this writer. To be more specific, steering is light and positive, tho not entirely free from backlash, and the ratio seems just the right compromise between being "fast" without being so delicate as to become tiring on long trips. The steering wheel requires 3¼ turns from full left to full right lock.

With one exception, it is difficult to find any serious fault or criticism of this car. The exception is the shifting mechanism which not only is of a non-standard shift pattern, which is serious enough, but also falls far short of American standards of positive control. What happens to the clutch when parking lot attendants use high for starting up, or try to find reverse, I would hate to observe. Even after knowing the shift positions thoroly, we occasionally found ourselves in high instead of the 2nd speed starting ratio. In this writer's opinion, a much better arrangement would be to make the emergency first speed the "latched out" type instead of reverse, and employ a standard American shift pattern.

Handling at high speed is very good and altho typically American as far as roll on corners is concerned, the excellent steering offsets this to a great extent and there is almost no tire squeal. Brakes required only a light application for normal stops and deserve no criticism.

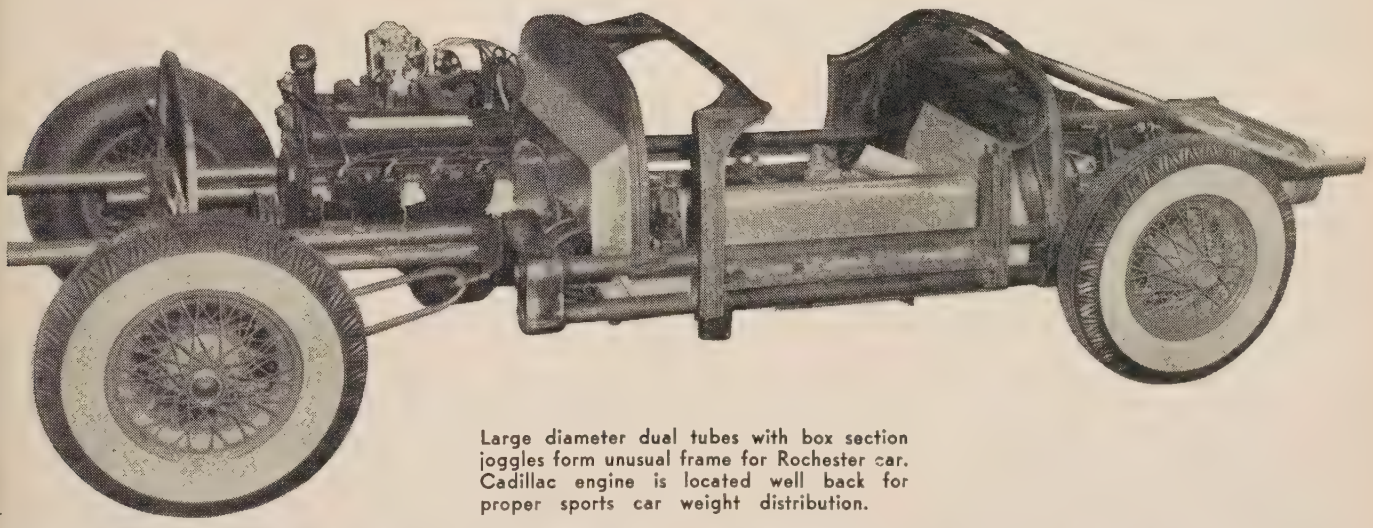
Driven with moderation, the fuel consumption rate can be as low as 30 mpg but in our rather strenuous testing, the overall average worked out at 21 mpg.

Summing up the Hillman Mark IV, I especially liked its appearance, comfort, and smoothness. It should be thoroly reliable, low cost transportation for thousands of Americans who would appreciate such a car—but do not know it even exists.

SPECIFICATIONS

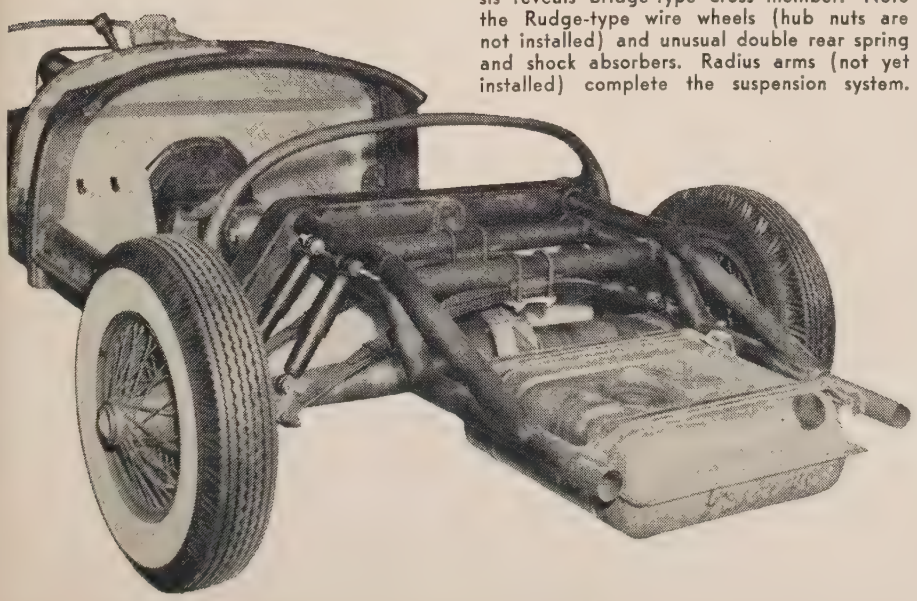
bore	65.09 mm (2.56 in.)
stroke	95.00 mm (3.74 in.)
displacement	1265 cc (77.2 cu in.)
max. bhp	38 at 4200 rpm
max. torque	48.6 lbs/ft at 2400 rpm
comp. ratio	6.6 to 1
valve timing:	I.O.— 8°
	I.C.—52°
	E.O.—50°
	E.C.—10°
gear ratios (overall)	18.60 1st
	12.89 2nd
	7.79 3rd
	5.22 4th
turning circle	33 feet

The car for this test was supplied by Peter Satori Motors, of Pasadena, where it is normally used as a demonstrator.



Large diameter dual tubes with box section joggles form unusual frame for Rochester car. Cadillac engine is located well back for proper sports car weight distribution.

Chassis Details of the 'Rochester' Sports Car



Rear view of the Rochester sports car chassis reveals bridge-type cross member. Note the Rudge-type wire wheels (hub nuts are not installed) and unusual double rear spring and shock absorbers. Radius arms (not yet installed) complete the suspension system.

Emil Diedt, noted race car and "special" constructor, is now putting the finishing touches on an interesting car built to order for Rochester, the well-known radio and motion picture comedian. The frame is built up of steel tubing and box sections, with an unconventional "jog" in each end of the side members. Reminiscent of a "dirt-track" race car, the front suspension has a solid axle, transverse leaf spring, and radius arms. Two transverse leaf springs, four shock absorbers, and radius arms. Two transverse leaf springs, four shock absorbers, and radius arms are used at the rear. Power plant is a V-8 Cadillac, which will be given the full speed treatment before the car is completed. At present, the finishing touches are being made on the body, with completion scheduled for the near future. Rochester has expressed a desire to enter the car in the various sports car races in 1951.

Also under construction in the Deidt shops is a front-drive Indianapolis car. This car features the light aluminum chassis design used last year on the Brady Special built by Deidt and Schroeder. Power plant is a Meyer-Drake "270".

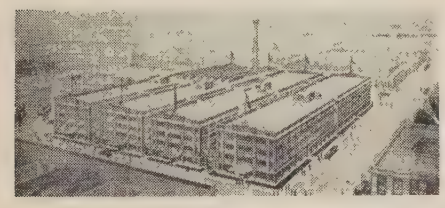
SAFETY STUTZ

1926–1939

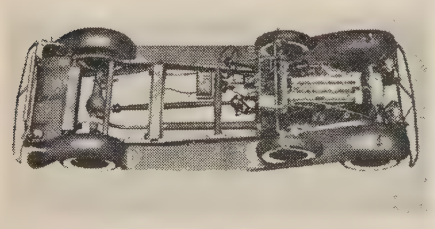
(The Last Years of the Car that Made Good in a Day)

by P. S. de Beaumont

Headlamp tie-bar ornament of Stutz DV-32.

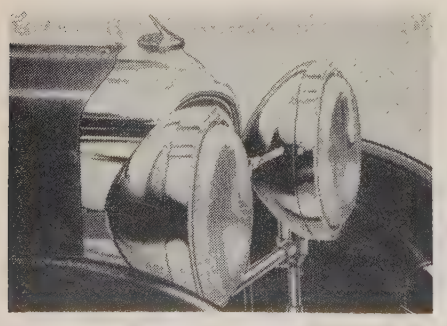


The Stutz factory, as it was at the end, 1939.



The 1933 Stutz DV-32 chassis. Note the rugged construction, and d o h c 156 hp engine.

Weymann fabric-covered body construction. The basic idea was light weight, and the separation of all wood parts by means of metal plates, to prevent spueaks and rumbles.



Ryan-lites, as used on all Stutz cars, 1929-32. Note the sun-dial radiator ornament, identifying the car as a Blackhawk.

Radiator ornament—Ra, the Egyptian sun god.

For 1926, the Stutz Motor Car Co. of America presented a totally new model, the "Safety Stutz," series AA, which superseded its earlier models.

Technically, this car was most interesting. The 9-main-bearing, 8-cylinder engine directly actuated its 16 vertical valves by a chain-driven overhead camshaft. With 4.8:1 compression ratio, this 3 3/16″ x 4½″ engine of 287.27 cu in developed 92 hp at 3200 rpm. The peak torque was 193 lb-ft at 1400 rpm, at which speed the mep was 100 psi.

The Timken rear axle was of the underslung worm type, with Hotchkiss drive. The 3-speed Detroit transmission was in unit with the engine, at last, while the clutch was of the single dry disc variety, also for the first time in a Stutz.

A famous feature of the earlier series AA cars was the use of Timken hydrostatic 4-wheel brakes. In brief, the operation was that six brake shoes were hydraulically expanded outwardly against the drum by a kind of rubber inner-tube which was expanded by pedal pressure on the water-alcohol solution. These brakes were wonderfully smooth for their day, and the great area of lining gave long life. However, they were troublesome, lacked power for emergency stops, and were soon replaced by ordinary Lockheed 2-shoe hydraulics with vacuum booster. The emergency brake at the rear of the transmission was retained.

The title "Safety Stutz" was based not only on the brakes, but also on the (for then) low and massive frame which featured steel running boards directly attached to it instead of on hangers, and on safety glass all around—the first in an American car, even if it did have wires in it like a factory skylight.

Six Brewster-designed bodies, by Phillips of Warren, Ohio, and American, of Philadelphia, were available at $2995 on the 131″ wheelbase, as well, of course, as custom bodies.

The series AA cars weighed from 4165 lbs (roadster) to 4416 lbs, and claimed performance was 5-25 mph in 6.5 secs, 10-50 mph in 18 secs, and 3 to 70 mph in high gear. Fuel consumption was said to be 14 mpg, with 1000 miles per gallon of oil.

Stutz was well repaid for introducing this first of its ohc models, since sales jumped from 1,053 in 1925 to 5,069 in 1926. This success may have been partly due to the excellent reception which the new car received in the motor press.

Under Stutz president F. E. Moscovics, the men responsible for the design of the new Stutz were chief engineer Charles S. Crawford, assisted by Charles R. Greuter (of Matheson fame, and an ohc designer as early as 1902), Paul Bastien, former chief engineer for Metallurgique, and William Guy Wall.

Series AA was carried thru 1927, with the usual minor improvements plus the addition of a 145″ wheelbase model. Sales dropped to 3,298.

In 1927, Stutz returned to racing after a 12-year lapse, and became the "undefeated stock-car champion of 1927." This title seems well deserved because the firm entered every AAA major stock-car event but one, and won them all. Furthermore, only one Stutz failed to finish, due to involvement in an accident. These races were chiefly at Atlantic City's board track. Interestingly, the drivers included Gil Anderson and Tom Rooney, both of the Stutz team in the good old days, and they did well. For example, at Atlantic City, on September 5, 1927, Rooney won a 150-miler at 96.308 mph in a stock 4-passenger Stutz Black Hawk speedster.

Meanwhile, Glen Schultz had begun his epic series of successes at Pike's Peak when, in 1925, he entered a stock 6-cylinder Stutz which was second to a supercharged Chandler. In 1926, he won with the same Stutz, and then was victorious in 1927 in an 8-cylinder Stutz special while W. P. Bentrup won the Penrose Trophy in a stock Stutz. The Stutz Special which won in 1928 and 1929 was Roots-supercharged as part of the Stutz concern's development of this unit, which they offered in 1929. Stutz successes at the Peak continued with a win in 1930, second in 1931, and victories in 1932 thru 1937.

The Stutz for 1928 was series BB, the "Splendid Stutz." The basic features of series AA were retained, but with many improvements. The single-ohc engine remained essentially the same, but the bore was increased to 3¼″, which raised displacement to 298.64 cu in. Standard compression ratio was 5:1, but the 2- and 4-passenger Black Hawks had 5.5:1 pistons, while pistons up to 6.25:1 were available. Output was 115 hp at 3600 rpm, with maximum torque of 205 lb-ft at 1800 rpm (5:1 compression). With 6:1 compression, 121 hp was obtained.

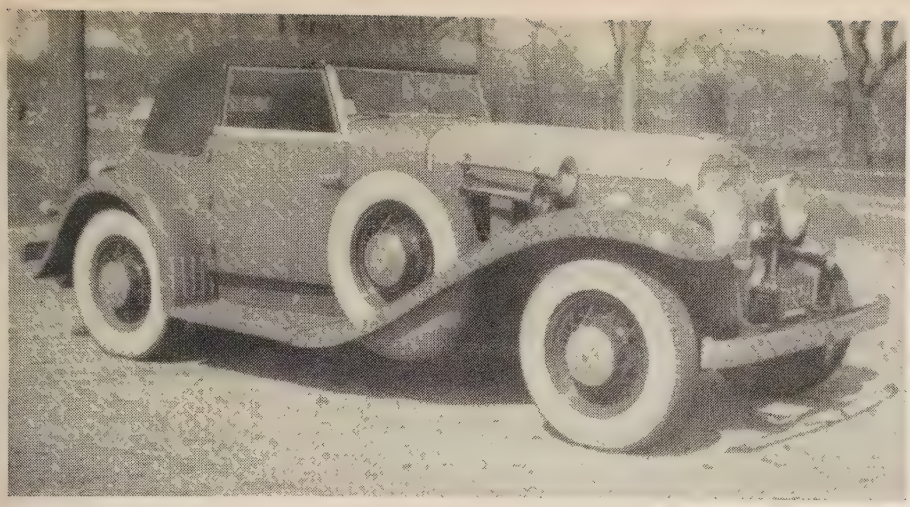
Such former features as full-pressure lubrication thruout, forged aluminum connecting rods, and dual ignition, were retained, as was the Myers "one-shot" chassis lubrication (changed to Bijur in 1929).

Despite 25 bodies, by Weyman and others, offered on the two wheelbases, sales were disappointing and dropped slightly to 3,127. Prices were $3495 and up.

But 1938 was a big year in racing if not in sales. Besides the Pike's Peak win, the Indianapolis concern had the satisfaction of E. H. Brisson's second place at Le Mans, only just behind Barnato's Bentley, after having lead the entire race from the 3rd to the 13th of the 24 hours. Shortly thereafter, Richard Watney finished 12th in the Tourist Trophy (Ireland) in the same car.

Meanwhile, Gulotta and Bowman had gained 10th spot in the 1928 Indianapolis in their 90-cu in Miller "Stutz Special," and in August, Lou Meyer in a similar Stutz Spl. was the winner at 118 mph in a 200-mile race on the Altoona boards.

But the biggest Stutz racing attempt of the year was the famous Stutz Black Hawk Special world's land speed record contender. This car was based on two 90.5-cu in, 8-cylinder Miller engines (a total of 4



The author's partially restored 1933 Stutz Super Bearcat. About 25 of these were built.

blocks), with each pair of blocks set at 15° on a common crankcase containing both crankshafts. This supercharged (two centrifugal blowers) engine developed 385 hp at about 7500 rpm, and in the 112-in wheelbase, well streamlined, 3000-lb car, 240 mph was expected. Six draftsmen and 12 mechanics under Frank Lockhart's direction completed the car in 3 months, at the Stutz plant, at a cost of $70,000.

On April 25, 1928, Lockhart established a 1-mile, 183-cu in record of 198.3 mph in this car, at Daytona. In a trial run for the world speed record, a timed speed of 203.45 mph was achieved, the official record then being a fraction away from 207 mph. On the first real attempt, a sudden squall struck the car and it went into the sea. Both Lockhart and the car were damaged, but he soon recovered. On his next attempt, a tire blew, and the car rolled, throwing Lockhart out, with fatal results. The engine of this car continued to serve for many years at Indianapolis, in the Sampson - Spike Jones Special.

For 1929, Stutz offered series M as an improvement over series BB. The principal change was an increase in bore from 3¼" to 3⅜", but there were, as usual, many minor improvements. Claimed series M performance: 5 to 25 mph, 6.8 secs, and 5-50 mph, 19.8 secs (3rd gear); 10-50 in 21.7 secs and 25-70 in 30.6 (4th gear). Top speed, 75-85 mph depending on gear ratio. Economy, 10-13 mpg.

In keeping with the times, Stutz expanded by adding the Blackhawk (one word, as compared with the earlier *Stutz* Black Hawk speed models). This was a lower-priced car using as many Stutz parts as possible. Two engines were offered—a 6-cyl, 85 hp, ohc, otherwise identical with the series M, and an L-head, 8-cyl, Continental of 88 hp. The Blackhawk was offered only in 1929 and 1930. In 1931 the 6-cyl model became the Stutz LA while the L-head was dropped.

A notable change for Stutz and Blackhawk for 1929 was the adoption of a 4-speed Detroit transmission, with "Noback," a hill-holder.

There was little Stutz racing in 1929. At Le Mans, Bouriat and Philippe (de Rothschild) finished 5th. In the Tourist Trophy, Stutz did not finish.

Very interesting, however, is that Stutz offered 25 supercharged series M cars this year. The Roots blower was driven directly by the front end of the crankshaft, and the updraft Zenith carburetor was on its pressure side. A clutch permitted the driver to run with or without the compressor. Except for details directly associated with the installation, and steel connecting rods, the engine was standard. Power was increased from 115 hp at 3600 rpm to 143 hp at 3800 rpm. Supercharged models ran at Le Mans.

Built-in radio was another startling feature for 1929 and 1930.

For 1930, the high spot was that the Jones Stutz Special, a *stock* speedster except for the lack of fenders and the addition of an extra set of shock absorbers, finished 10th at Indianapolis.

In 1931, Stutz introduced their famous DV-32, so often erroneously called "the 32-cylinder Stutz," the "Bearcat engine" or the "Miller" engine. Actually, it was nothing more than a dual-overhead-camshaft, dual-valve head on the M cylinder block. The 4 valves per cylinder made it necessary to use a single spark plug per cylinder as compared with the dual system used on the single ohc M. Except for the head and associated parts, the M and DV-32 chassis were identical.

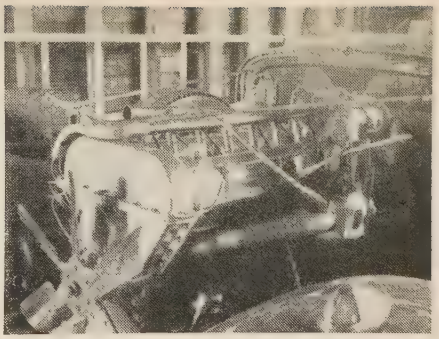
The DV head, the work of then chief engineer Greuter, was more successful than the supercharged, producing 156 hp at 3900 rpm. A road test of a DV sedan, made at Brooklands in 1932 by a leading British motor magazine, provides the following performance data with 4.1:1 gears: 10-30 mph, in high gear, in 11 1/5 secs, and timed max speed of 90 mph "with more in hand." The report heaped praise on the car.

The Bearcat came back in 1931, in the form of a 2-seat, rounded-tail speedster on the 134½" standard DV-32 chassis. Guaranteed in writing was a speed of 100 mph or more. In the same year, the Super Bearcat was offered, this a 116" wheelbased DV-32 with a 2-seat convertible body. It too was standard DV-32 except for a section removed from the frame, and a 30-gal tank.

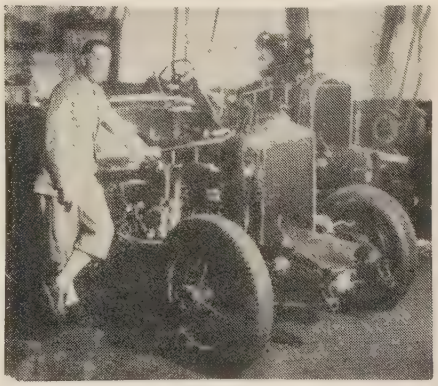
In 1932, the series M was renamed SV-16, and a 3-speed syncromesh Muncie transmission was an improvement, for all models, over the 4-speed Detroit.

Despite financial difficulties, Stutz continued to go overboard with too fancy a line. There was the 127½" wheelbase 6-cyl LA, the 134½" wheelbase MA and DV-32, the 145" MB and DV-32, and the stubby Super Bearcat. At least 25 stock and custom bodies of every description were offered at prices ranging from $1,995 for the LA coupe to $8,995 for a Fleetwood DV-32 town car. This folly is clearly shown by sales of 462 cars in 1930, 383 in 1931, 127 in 1932, 115 in 1933 and 6 in 1934, according to one authority. My own opinion is that a couple of hundred should be added to each of these figures.

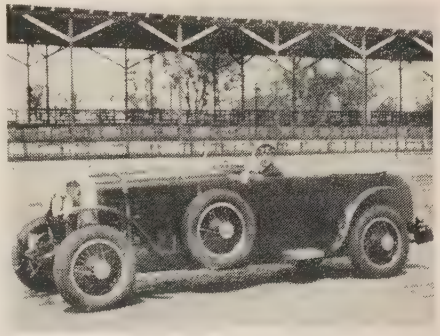
Stutz continued this line of cars, with very minor changes, thru 1934. Altho 1935 models, mostly unchanged, were announced for 1935, none appear to have been built.



The engine in the author's car. The carburetor air cleaner is not shown, and the fuse block is not authentic. This engine developed 156 hp.



E. H. Brisson who won 2nd place in a Stutz in the 1928 Le Mans 24-hour race, inspecting one of the 143 hp, Roots supercharged Stutz cars he purchased for the 1929 Le Mans race.



Baron Philippe de Rothschild, testing his 4-passenger Stutz in which he finished 5th in the 1929 Le Mans race. Taken at Indianapolis.

Meanwhile, the handwriting on the wall being in neon, Stutz looked for a way out. The idea of producing William B. Stout's revolutionary Scarab was considered while Stutz tried for the commercial field with its famous Pak-Age-Car. This was a light, low-floor delivery truck of the kind suitable for dairies, bakeries, etc. (Speaking of commercial cars, the Stutz Motor Car Co. was never connected with the Stutz fire engine concern.)

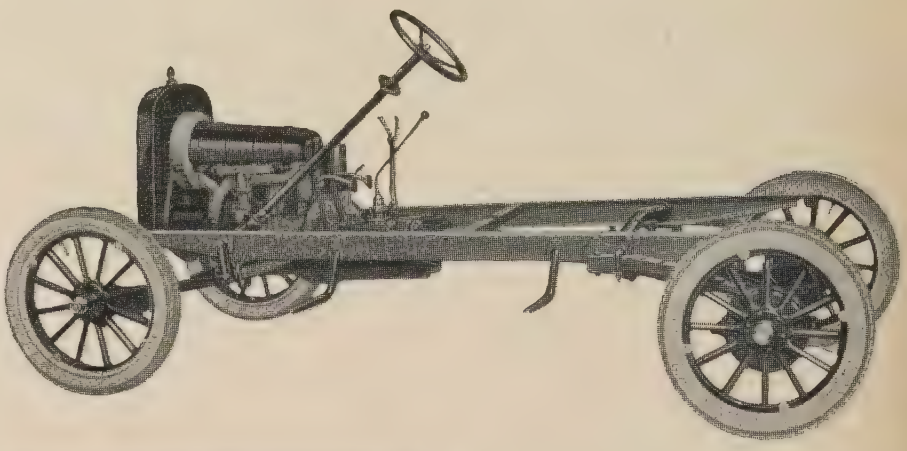
A 4-cyl Hercules engine was located at the rear in a separable assembly including the radiator, clutch, transmission, rear axle, and wheels. The whole works could be changed in 15 minutes. All four wheels were independently sprung.

Stutz marketed the Pak-Age-Car until its financial troubles made it necessary to dissolve the firm in 1938 or 1939. By 1940, the Diamond T concern had taken over the Pak-Age-Car, and the Stutz name, so dear to enthusiasts the world over, passed out of living existence.

ANTIQUE AND VETERAN

by W. Everett Miller

THE AIR-COOLED CHEVROLET

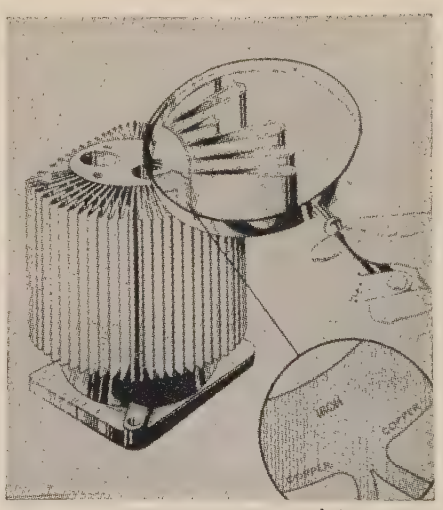


Have you heard about the air-cooled Chevrolet engine?

In December 1922 the General Motors Corporation released a sensational announcement which stated that the Chevrolet "Copper-Cooled" Car was ready for the market.

With varied success, several hundred makes of automobiles had been offered with air-cooled engines ranging from one to eight cylinders . . . so the basic idea was not new. Casting cylinders with integral fins is a production problem and some tried the even more expensive process of machining fins in solid blocks to obtain thin radiating surfaces. Others screwed studs into the tapped cylinder or wrapped the barrel with crinkled sheet metal flanges. Most of these designs produced a longitudinal air flow thru the fins, leaving the area between the cylinders very much under-cooled, warping the cylinders and sticking the pistons.

The successful Franklin engine of this period was designed for downdraft cooling thru circumferentially closed vertical fins. The individual cylinders were produced by placing flanged copper fins in the foundry molds and casting the barrel so that the fins were imbedded in the iron. But old timers will recall that the Franklin was not a cheap automobile and the company was committed to very limited production.

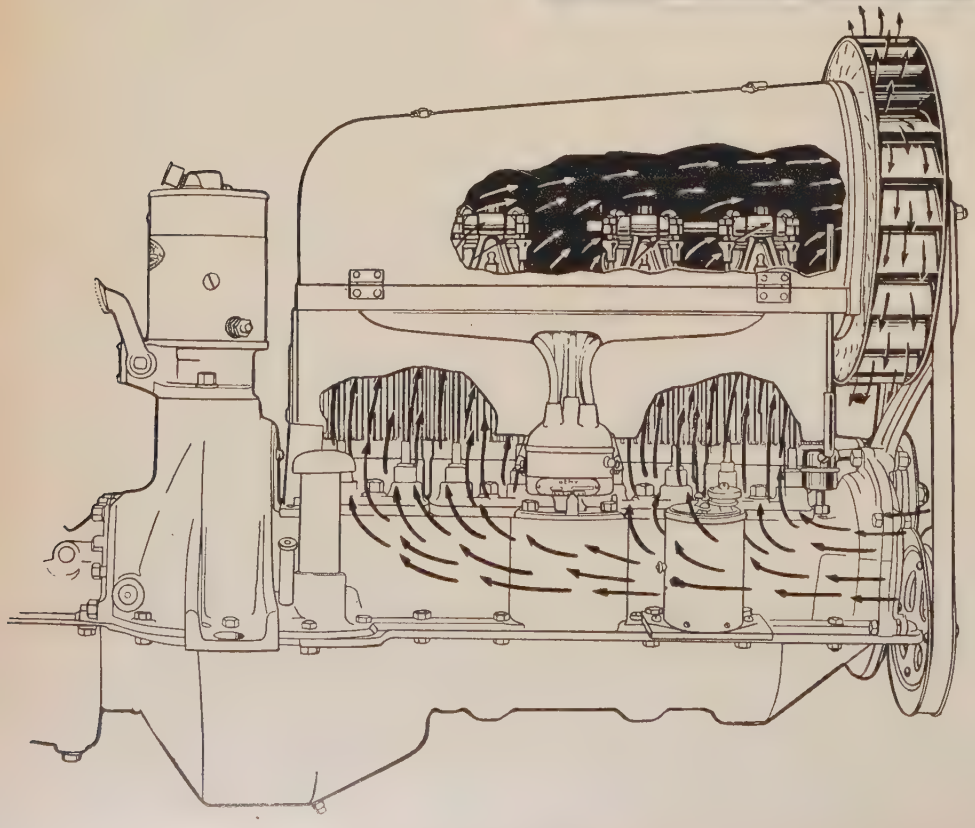


The interesting cooling fins on the Chevrolet engine are copper, bonded to the cast iron cylinders. A similar arrangement is now used to cool high-powered radio transmitter tubes.

The Chevrolet announcement was, therefore, received by the public with considerable enthusiasm. Here was an air-cooled car that everyone could buy! This new engine was to be an alternate choice in the famous Chevrolet Superior models.

As with most all air-cooled engines the cylinders were individually produced. They were machined both inside and out to obtain uniform wall thickness. The vertical sheet copper fins were formed in loops about the cylinder and fused to the iron so that heat transfer to the radiating surfaces was most rapid.

The cylinders were mounted on the crankcase in pairs and similarly capped by two pairs of overhead valve assemblies. The fins between the adjacent pairs were necessarily short and consequently of less cooling capacity. To offset this, the intake valves were placed above the short-finned sides. The exhaust valves were thus toward the outside ends in each pair where cooling was more effective.



The fin area was inclosed by a sheet metal housing which was open at the bottom to the atmosphere. Above the engine a large pressed-metal air duct, with a valve access door, received the hot air being drawn up and forward where it was expelled radially by a large squirrel-cage blower. The axis of this fan was at the top of the engine and it was driven in the conventional manner by V-belt from the crankshaft.

The four-cylinder engine was "square," with 3½-inch bore and stroke. With approximately 134.6 cubic inch displacement and a 4 to 1 compression ratio, it developed a maximum of 22 hp at 1750 rpm. The touring car, on 103-inch wheelbase, weighed 1670 pounds, giving a power to weight ratio (with five passengers) of 111.5 pounds per hp. The price was $725 fob.

After a few of these engines were built, they were withdrawn from the market without explanation. Twenty-eight years later the public is still waiting for an economical air-cooled automobile.

O.S.C.A.

1100 cc. Sports Car

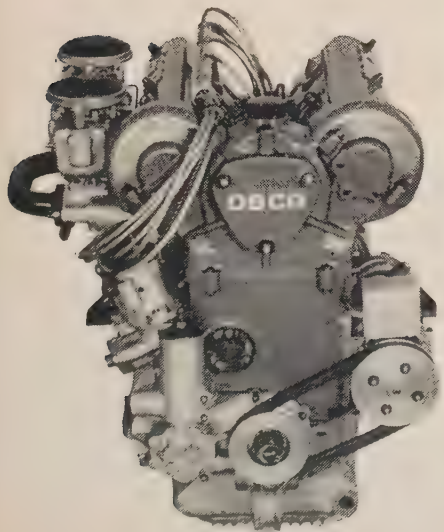
The Maserati brothers, a family whose name is one of the greatest in automobile history, have combined to form O.S.C.A., a company building special racing and sports cars. Their latest series of cars is for the 1100 cc sports/racing class, most of which are based on Fiat 1100 engine and drive components. The O.S.C.A. engine is fitted with a specially designed double-overhead-camshaft head, in the best racing tradition of Maserati, giving an output of 85 hp @ 6800 rpm. The tubular chassis and light aluminum body combine with this engine to give performance which, for the car's size, is remarkable. Engine and chassis specifications follow:

ENGINE

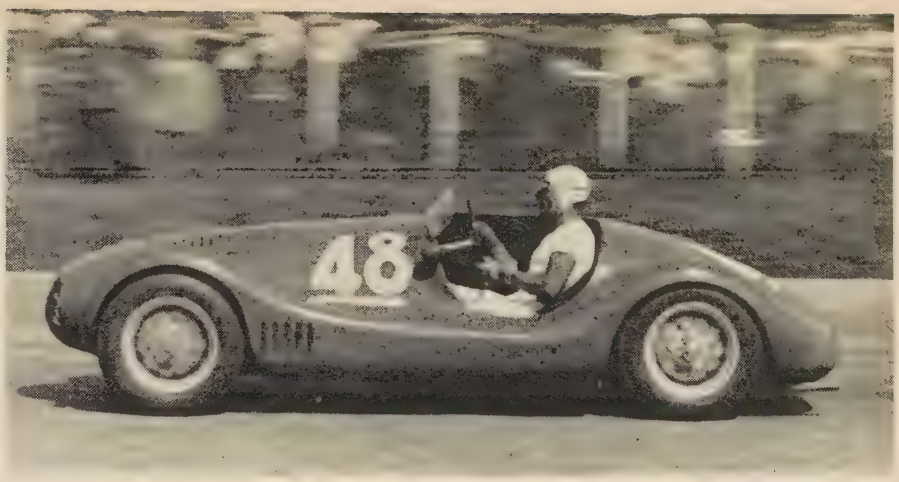
No. cylinders	4
Bore	71 mm (2.79 in.)
Stroke	70 mm (2.75 in.)
Displacement	10 92.4 cc (66.6 cu. in.)
Comp. Ratio (80 oct)	9:1
Horsepower	75 @ 6800 rpm
Comp. Ratio (Spec. fuel)	12:1
Horsepower	85 @ 6800 rpm
Piston speed at 6000 rpm	14.12 m/sec (2780 ft/min.)
Valves	2 per cyl, inclined
Combustion chamber	Hemispherical
Camshafts	Double overhead, chain and gear driven
Carburetors	2 Weber
Distributor	Marelli

CHASSIS

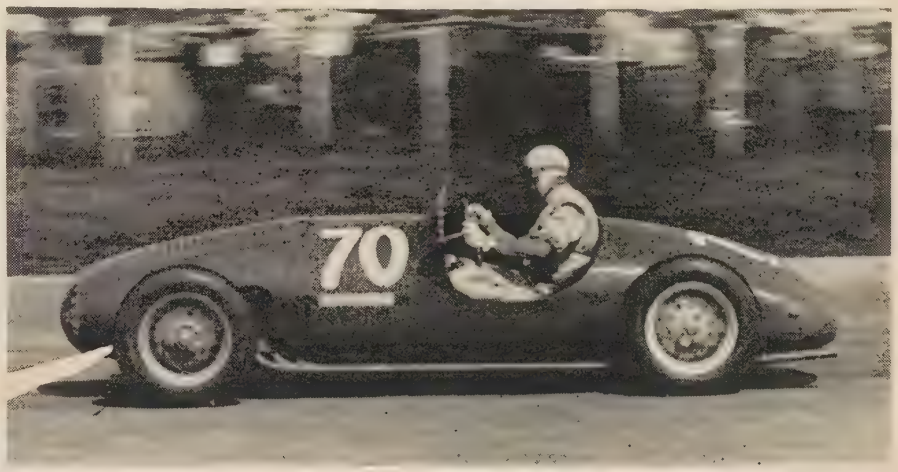
Chassis	Tubular
Brakes	Hydraulic 4-wheel
Rear springs	Torsion bars
Front springs	Vertical coil
Shock absorbers	Tubular "Riv"
Tires	5.00 x 15
Steering	Worm and sector
Tank capacity	15½ gals
Clutch	Dry-single disc
Transmission	4-speed and reverse
Elect. System	12V. Marelli
Wheelbase	2.27 m (90 in.)
Front tread	1.21 m (47.5 in.)
Rear tread	1.18 m (46.5 in.)
Weight	385 Kg (848.5 lb.)
Ground clearance	8 inches



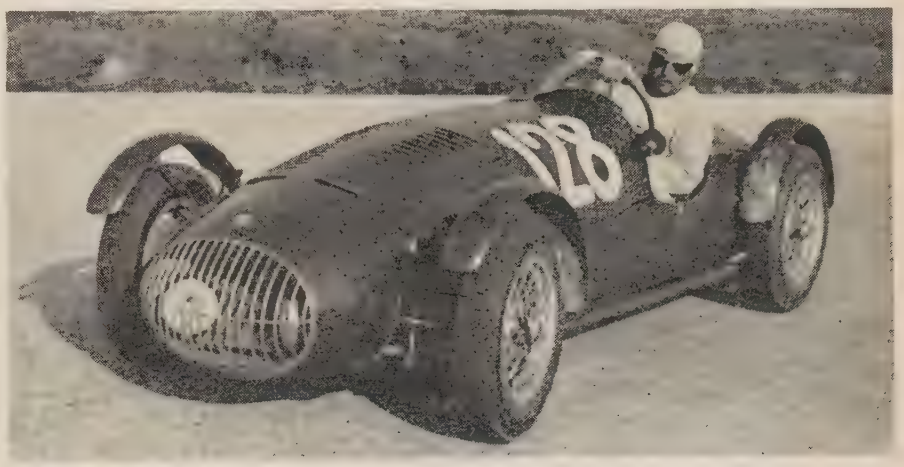
The O.S.C.A. 1100 engine. 85 bhp @ 6800 rpm



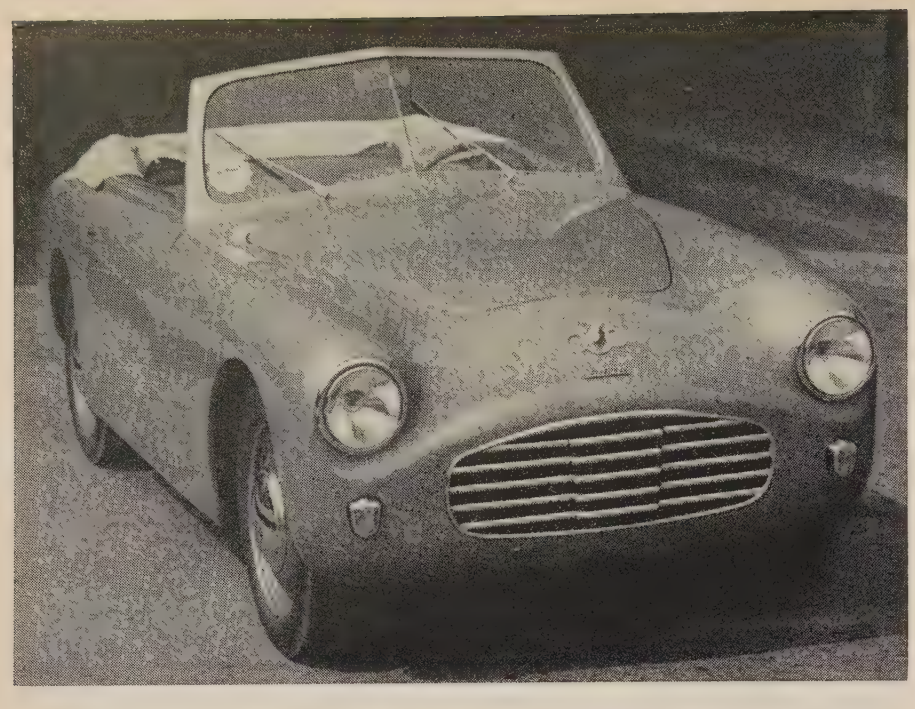
Felice Bonetto, winner of the 1100 cc. Criterium at Monza in an aerodynamic O.S.C.A.



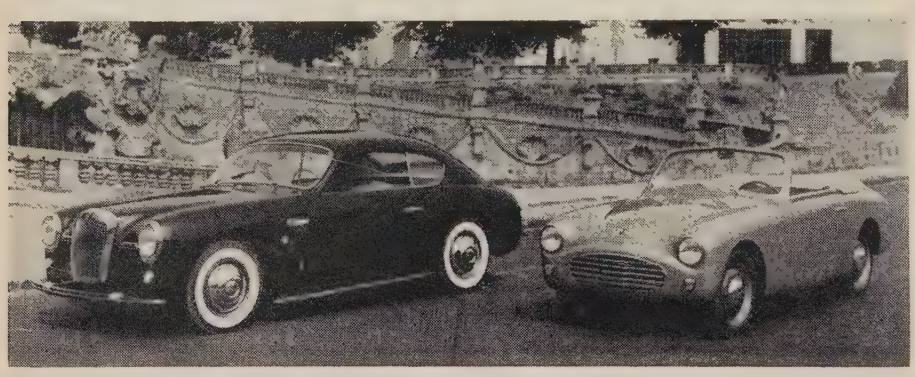
The late Raymond Sommer, who finished second at Monza, also driving a new O.S.C.A.



Above, Luigi Fagioli on O.S.C.A. 1100 at Modena. Below, Bonetto leads Sommer at Monza.



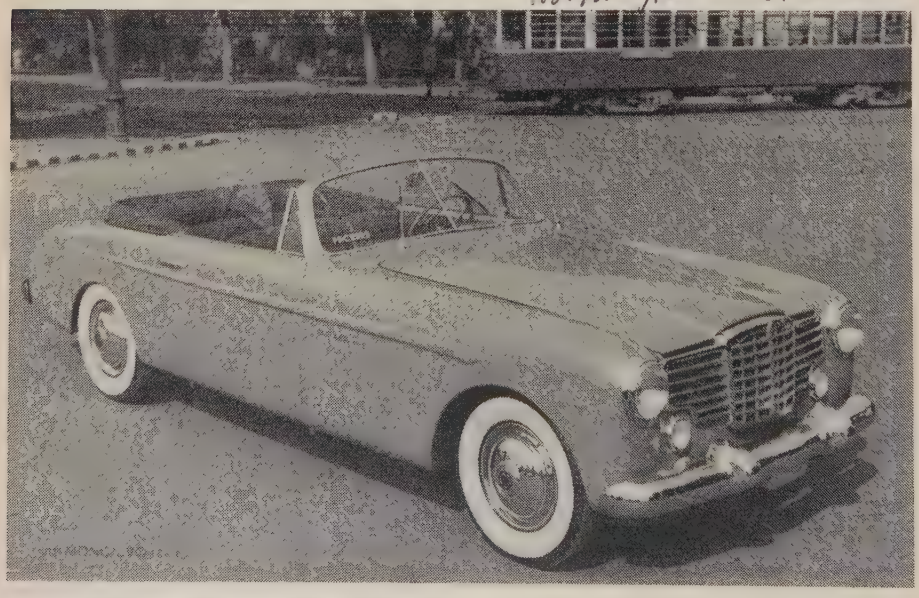
The Siata "Amica" is a neat convertible using basic Fiat "500" components. Body by Bertone.



SIATA

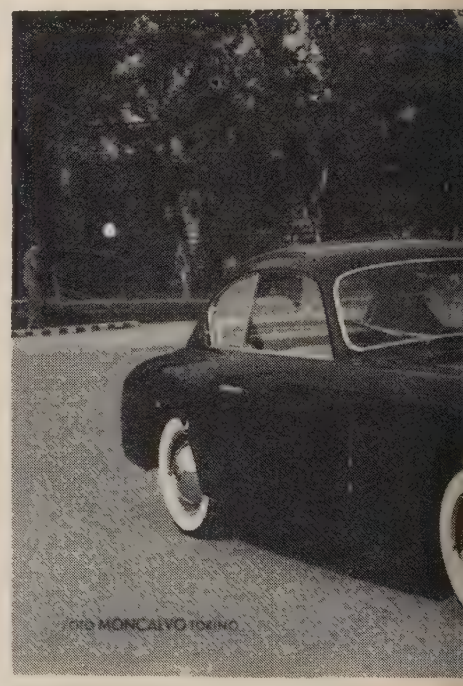
The Siata organization builds both airplanes and cars. The clean lines of the "Daina" and "Amica," above, show evidence of aerodynamic cleanness and light weight construction. "Daina" is based on the Fiat 1400.

Washington DC streetcar



VIGNALE

The Packard 8 chassis is used by Vignale for this low, long convertible coupe. Note the flat hood, joining the squared-off Packard grille at nearly 90°. Italian styling looks very good on Packard.



CANTA

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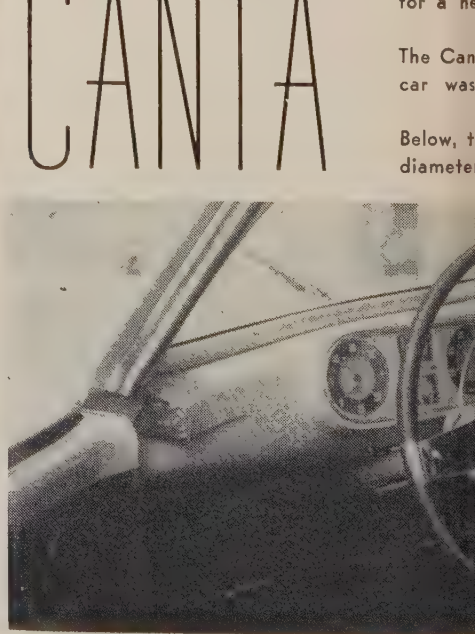
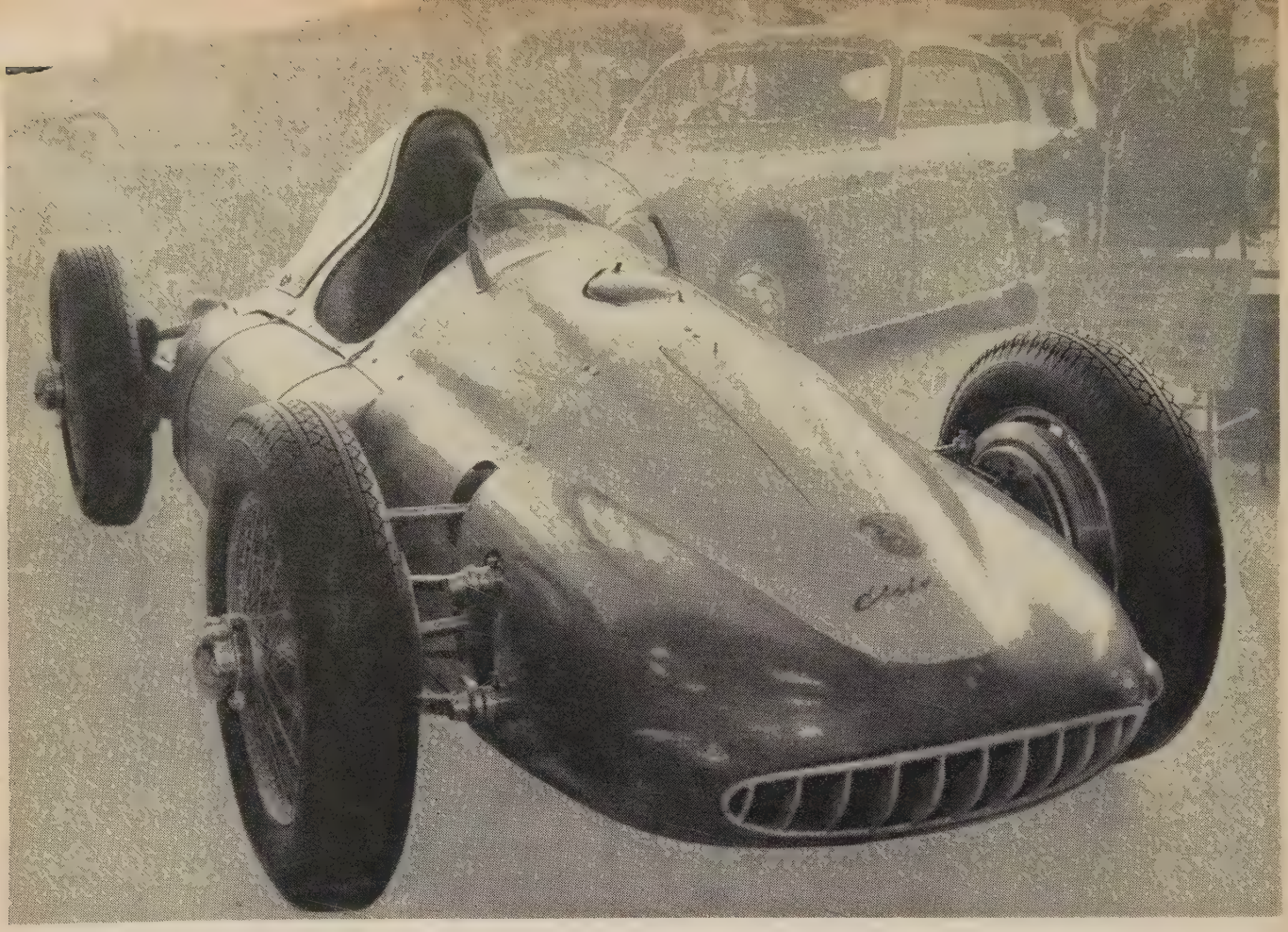


has used the popular Fiat 1100 E chassis
coupe and sport convertible, shown above.

400 with coupe body is shown at right. This
y built for the Turin Automobile Show.

r of the Fiat 1400 is functional, with large
wheel, excellent visibility, few instruments.



The Inside Story of the—

CISITALIA-PORCHE G.P. CAR

by Corrado Millanta

Near the end of November 1950, Cisitalia's owner, Mr. Dusio, actually living in Buenos Aires, removed the attachment which immobilized the Cisitalia-Porsche Grand Prix Formula 1 Car, built during 1947-48 in Turin (Italy). It was shipped, with parts for a 2nd car, to Argentina, where it will be perfected, to run under Argentine colors.

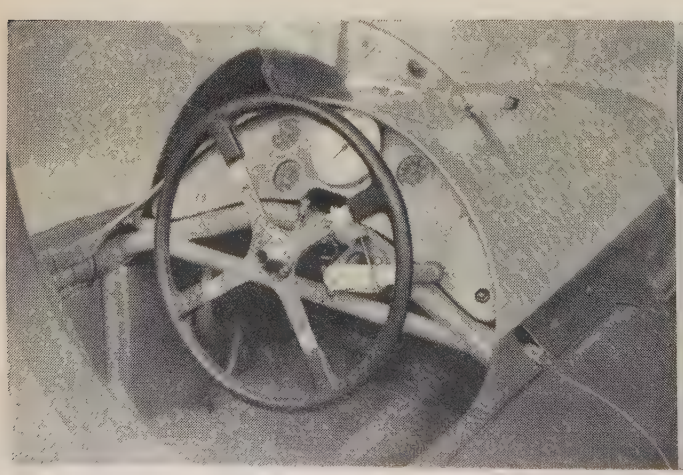
Because of this matter, there has been a revival of interest in it; therefore, we wish to say now what is the true situation of this car and how it went thru so many troubles.

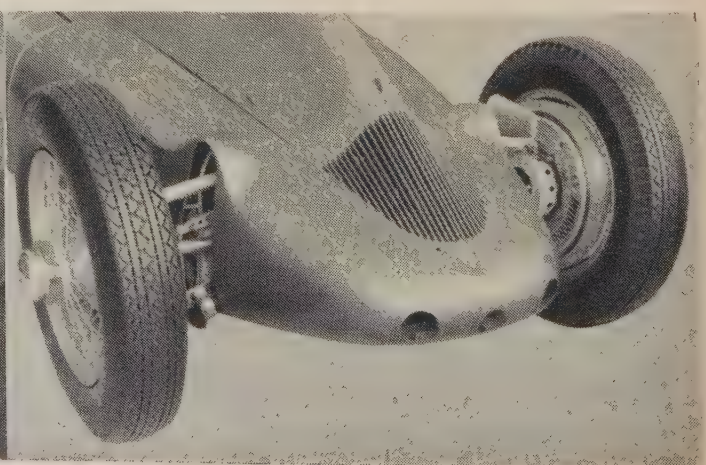
First of all, the Cisitalia Grand Prix car has never run one single yard and its engine has never been tested, not even on the testing bench,* and we declare that what we are saying now has never been published before. We know perfectly the incredible story of this car, because we were present when the Cisitalia-Porsche deal was made in the winter of 1946-47, and because we followed step by step the building of the car.

After several weeks of dealing in technicalities, the Porsche-Cisitalia agreement was as follows: By a contract dated February 2, 1947, Mr. Dusio (Cisitalia) purchased from Porsche for the amount of 900,000 Austrian shillings, 10 million lires and $11,000 the patent of: "Grand Prix Formula 1 Car, V-12 1500 cc sport car, 11 hp diesel tractor, 2/12 hp hydraulic tur-

The cockpit of the Cisitalia G. P. car is neat and functional. Lever under wheel is to engage front-wheel drive. Note tubular frame.

Rear view of the G.P. car shows ventilating louvers, and rear brake cooling arrangement. Holes are for starting motor and exhaust.





bine." Besides these amounts the Porsche Company would have had royalties for each model built. Till today the only model built is the Grand Prix car.

The Porsche Company had for herself only 500,000 Austrian shillings, as the first contract said. A side contract allowed the rest of the money as a commission to Ferdinand Porsche, Jr., and Luisa Piech (Porsche's child), who had never been in Turin, not even during the contract conclusion. To be exact, we shall say that the 3rd article of the 2nd contract established that the other 400,000 shillings should be paid in Austria, but the $11.000 and 10 million Italian lires paid in Italy.

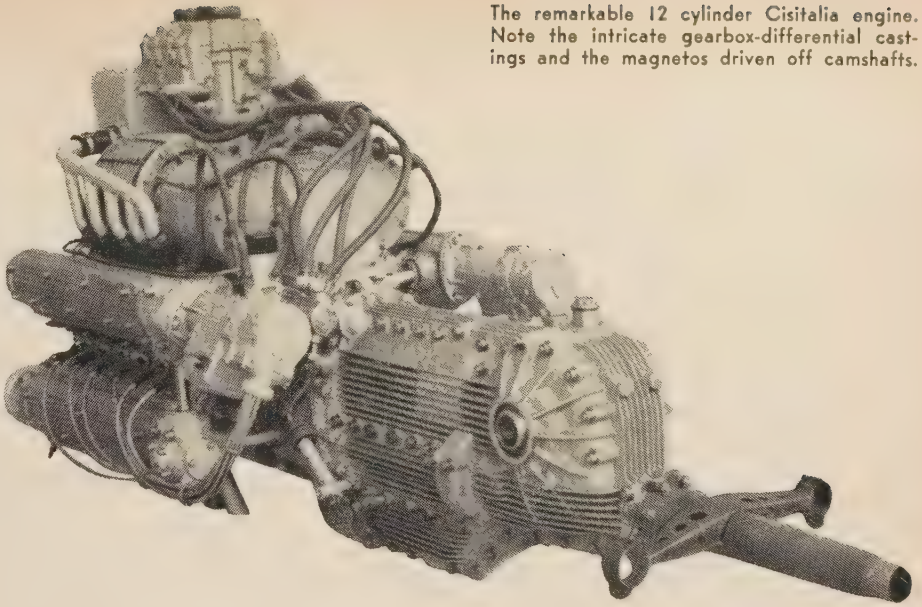
Contrarily to what everyone believes, it is not true that Porsche draws all the sketches. In fact, in the Porsche drawing office are very good designers (whose names never appear) and every one of them works at his specialized group (engine, transmission, chassis, suspensions, body, etc.). For instance, one of them is the Ing. Rabe, who is the only one out of Porsche family having a few shares in the company. We can also say that Prof. Porsche didn't take any part at all in the Cisitalia Grand Prix car design, because in 1947 he was detained by French authorities.

Dusio made in 1947 what you may call a great deal. His company, in fact, started to build sport and race cars, with the collaboration of world-famous technical office. It was the best desired thing at that time. This set-up scared even the big Italian automobile companies, because one of them, Fiat, to be precise, succeeded in introducing one of her engineers into the Dusio deal.

But after the deal was signed, Cisitalia made a childish and unpardonable mistake. The company already had a nice organization of very good Italian technicians, such as the well known Ing. Taruffi and Ing. Savonuzzi, formerly with Fiat, and some other intelligent designers and collaborators. Yet, after the conclusion of the deal, the general direction of Cisitalia was given to two people, who, other than their relationship with the Porsche Company, never had anything to do with the basic operation of the famous project office.

Not only that, but when Cisitalia hired, at our suggestion, the very famous Prof. Von Eberan, to let him build the Grand Prix car, just like he did formerly with Auto-Union Company, they put him under the directions of the new officials. It is understandable that a world-famous technician such as Prof. Von Eberan did not expect such a situation, so after few weeks, he left Turin for England, where he is now.

By then, the Cisitalia Company, being such a very difficult enterprise and at the same time very expensive (the Grand Prix car has probably cost $950,000) was going into bankruptcy, which prompted Dusio to try for financial assistance in Argentina.



The remarkable 12 cylinder Cisitalia engine. Note the intricate gearbox-differential castings and the magnetos driven off camshafts.

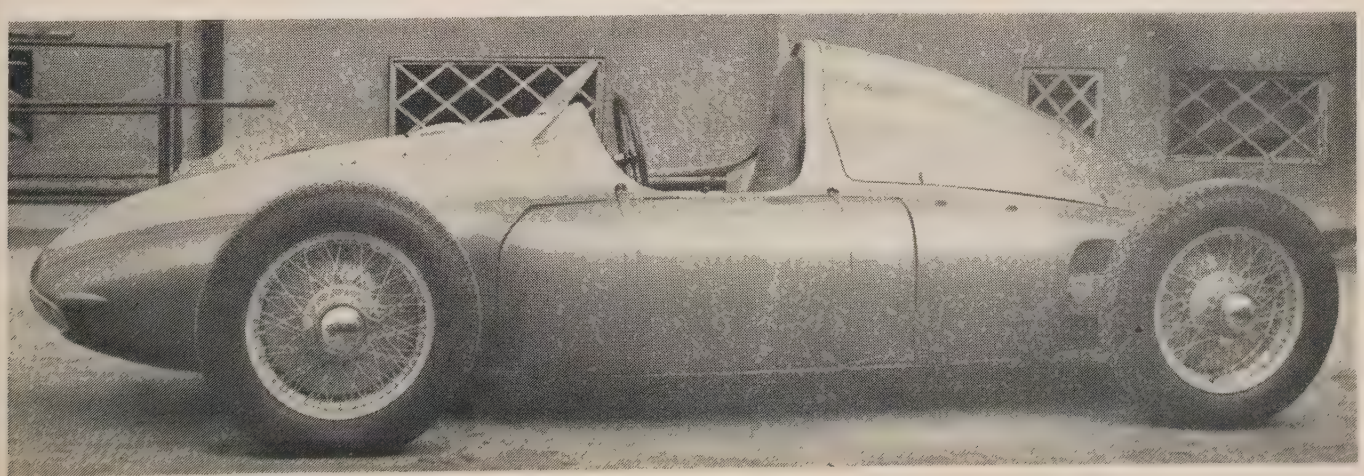
We'll see what will happen to this car, which never ran and has never been tested, but made everyone talking of itself. Many competent Italian and German technicians doubt the adequacy of the new set-up in Argentina. This kind of enterprise needs, besides a large financial backing, to be closer to specialized accessory industries (spark-plugs, magnetos, pistons, components, tires, etc.). So if this undertaking is very expensive in Europe, where it is easier to call a technician for any engine matter, in Argentina, it will be worse because there is not even one of these industries. For instance, the crankshaft of Cisitalia Grand Prix car is of the "Hirth" type and its parts are connected by a special gear, built by Hirth Co. of Stuttgard. As we already said, the engine has never been tested, if it will need some modification to the crankshaft, the setup would not be ready for many months. And this is just one of many examples.

Between the two projects, the original proposal and the actual prototype, there are many differences. January 20, 1947, when Dusio and I went to Kitzbuhel, Austria, to meet Porsche technicians, the car design, showed to us, had a frame made with two parallel tubes, similar to the one used by Auto-Union G.P. car before the war. The engine was a V-12 at 90° with a two-stage supercharger located in front of the engine crankcase. The present version has, instead, a trellis frame (truss) made of welded tubes; probably they considered the very good results obtained at that time with the 1100 cc single seat model, which had such a frame. Besides, the V-type engine was abandoned in favor of a horizontal opposed type, and the supercharger is now on top of crankcase; not only that, the Roots type has been substituted by the Centric type. These all-around changes indicate that, besides some doubts, what the Porsche technicians said about the Grand Prix design being ready since the winter of 1946-47 was not entirely the case.

While on the subject, there is another interesting detail. During our visit to Porsche technicians at Kitzbuhel, we were shown a design for a 1500 cc Grand Prix rear engine car, which was supposed to be, as they declared, the one that the Porsche technical office prepared for Mercedes-Benz Co. in 1939-40. This seemed very strange, because at that time Mercedes had the two famous 1500 cc cars (now under attachment in Switzerland) which proved themselves to be the best of their category at the Tripoli circuit. It could be possible that the design was offered to the Mercedes Co., but rejected before they built their own two 1500 cc cars.

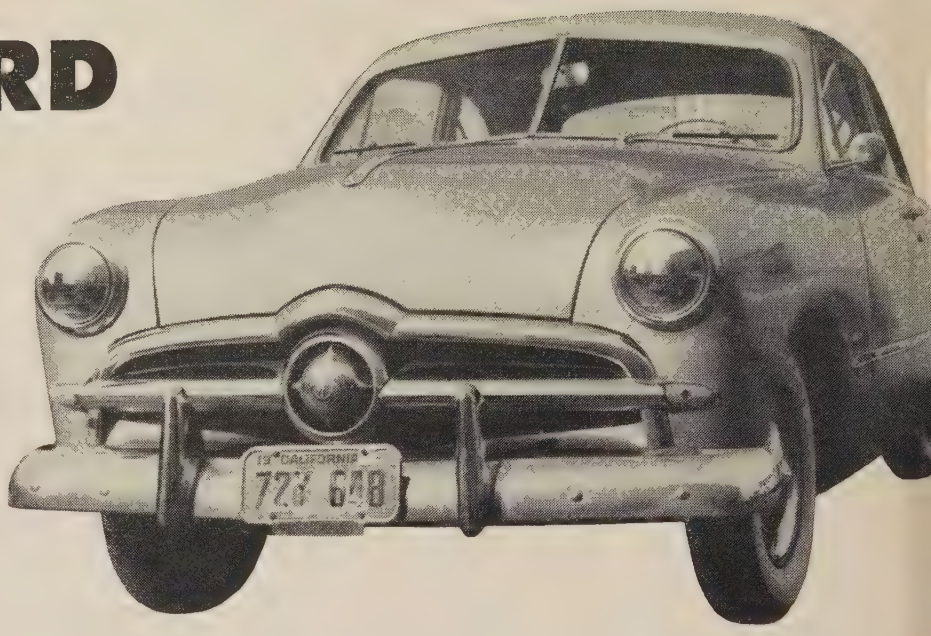
During the conversation with the technicians, Dusio was asked if he would prefer the 4500 cc unblown car instead of 1500 cc blown, because they said, the unblown one would weigh just 400 pounds

(Continued on page 30)



48,000 MILES IN A 1949 FORD

by John R. Bond



Many readers have inquired about the "shaving" of Technical Editor Bond's car. The hood ornament and Ford name above grille were removed as were the license plate holder and trunk latch on the rear deck. This common California modification aroused considerable interest in the East.

—PHOTO BY JACK CAMPBELL

Despite my intense enthusiasm for sports cars, a new 1949 Ford V-8 Custom club coupe was purchased by the writer late in 1948. The car was intended for normal everyday use, for contemplated long trips, and to use as a "sort-of" test car during construction of a sports car based on a similar chassis.

The car was revised slightly; a dual exhaust system with two stock mufflers was installed immediately, because I would not drive any V-8 with a single muffler. At 5000 miles the heads were milled and redomed to give 8.0 to 1 compression ratio. Since the axle ratio ordered was the standard 3.73 to 1 (the best ratio available for ultimate maximum speed), the extra 10 or 15 bhp gives a low speed performance at least equal to the 4.10 axle. The standing quarter mile has been clocked at 19.62 seconds, the standing half-mile at approximately 32.5 seconds. Top speed is substantially 90 mph.

While on the subject of performance, the speedometer-error should be mentioned. To clock a measured mile in 60.0 seconds, the needle must be kept at 67-68, to go 70 actual mph requires 80 on the indicator, and at 90 the needle goes an inch past the top calibration mark of 100 mph! In addition, the odometer is 3 to 4% optimistic, depending on tire pressure.

Fuel consumption varies from 16.0 to 19.6 miles per gallon. Two trips to the East Coast at an honest cruising speed of 70 mph most of the time gave 18.3 miles per gallon. From this data it is apparent that the slight modifications made give results equal to or better than an overdrive equipped car at a saving of $96 in original cost of the extra gearbox.

Oil consumption was, and still is, remarkably good. In 1949, on a 9000 mile trip, exactly 3 quarts of #20 oil were used—counting amount low at changes, etc. In 1950, with 42.000 miles registered, the trip to Watkins Glen resulted in only one quart of #30 oil consumed per 1000 miles.

No work has been done on engine, clutch, transmission, or rear end in 48.000 miles except the usual preventive maintenance, adjustments, and tuneups. The excellent economy on fuel and oil has been offset somewhat by fairly high maintenance costs, performed by a local dealer which, of course, is more expensive than doing it yourself. Items in this expense include 10 sets of breaker points (5 sets of plugs), a new distributor, 4 voltage regulators, a new battery, new master cylinder, brake reline, 4 wheel alignments, repainting, tune-ups, and miscellaneous small items.

As to general remarks on the car, the engine with stock 6.8 compression is much smoother and quieter than earlier V-8s. Milling the heads resulted in restoring the older model type of roughness, a phenomenom receiving much attention these days and one that Cadillac engineers state was a considerable factor in their decision to change from side valve to OHV. Aluminum alloy heads would reduce the present necessity for a steady diet of "premium" motor fuel even on a slightly retarded spark, tho I doubt if the roughness would be reduced appreciably.

The car is fairly comfortable on long trips. On five different occasions, 1200 miles were covered in 24 hours with 2 drivers, alternating at the wheel. Handling qualities, however, are not good. On smooth straight roads, the heavy front end and low rate front suspension shows up well—on rough or winding roads it is a different story. The front end seems to pitch up and down, and at the same time to "corkscrew" in a manner that can only be compared to a small boat in a "quartering" sea. On turns, the roll is appreciable, tho not particularly detrimental to cornering power if you get accustomed to it. Caster, or return action, is much too powerful and very tiring. The steering is not definite—normally there is a bare trace of understeer but turns taken really hard show evidence of oversteer up to the point where the rear end begins to slide—which then produces drastic oversteer. The above conditions are not by helped by a steering ratio of just over 23 to 1 requiring 4½ turns of the wheel, but then what American car of equal or larger size is any better?

Incidentally, lowering blocks were fitted and gave a definite improvement in handling qualities and are very fine, provided that the car is not over-loaded.

Engine cooling can only be described as passable in comparison to other American makes, nearly all of which will boil under summer driving conditions readily found in California.

The Bendix duo-servo brakes give a very light pedal pressure and are satisfactory for average American road conditions, tho lining life is very short (30,000 miles) and some brake fade can be induced.

The E.L.P. (extra low pressure) tires which I was forced to take in order to get delivery are generally unsatisfactory. Ford is to be commended for continuing 6.00-16 tires as standard equipment. Tire squeal can be reduced somewhat by carrying higher pressures which also improves the tire mileage by a very considerable amount. At 48,000 miles my car still has the original 5 tires, albeit with no tread pattern left. I recently tried 6.50-15 tires and it was almost impossible to get squeal and the car handled much better.

The Ford transmission has always had a good reputation and the '49 is virtually unchanged, except in minor detail. The gear ratio in 1st (2.82) is much lower than necessary with a such a "tail-light" car and the blocker-type syncro-mesh falls short of the standard of fool-proofness of the cam type syncro-mesh. Fast shifts are hindered by the flexible remote control system, which is very lightly constructed but has given no trouble even tho bent nearly double trying to "stay" with competitive minded Olds 88s. The clutch remains the Long semi-centrifugal type—one of the best, and action is still smoother by virtue of the more flexible Hotchkiss drive now used.

The 1949 Ford with its completely new (to Ford) design of chassis and body is not without faults. On the other hand, many of the minor irritations have been corrected on the 1950 and 1951 models. These include door rattles, fan belt squeal, and cold piston slap. I do not hesitate to recommend the Ford—the chassis design is sound, the powerplant time proven, and the body design functional. I particularly like the reversion to 56-inch tread, low frontal area, simple lines, box section frame, low weight, large displacement engine, ideal 3.73 axle ratio, servo brakes, Hotchkiss drive, hypoid axle gears, and much improved ease of servicing. As to the earlier rather critical comments, these are faults found on virtually any American stock car—remedied, perhaps, on the sports car mentioned in the first paragraph which should be completed by Spring. With wheelbase reduced by 10 inches to 104, engine aft by 18 engines, and a light 2-seater body, it should prove an ideal all-around car for my purposes.

TECHNICAL CORRESPONDENCE

HOMEBUILT SPORTS CAR

Seen my very fancy wagon on page 130 of October "Mechanix Illustrated"? She's good—but she suffers from 40 bhp per ton. I hanker after something nearer 80 bhp per ton.

I think I'll take a 1934 Ford V-8 chassis and make my sports car around it. Reasons—cheap to buy, engine already mounted far back in frame, stiff suspension a la sports car already there, plus 13-to-1 steering built in. As a first attempt at building a sports car, I'm convinced it is best to stick to building a body rather than to build from frame up. Learn slowly but surely.

I know of two simple ways to lower a chassis —to reverse the spring leaves and to install longer shackles.

Will either or both methods cause a change in caster angle such as to make it better not to do anything in this line if one wants to retain all the good steering built into the chassis?

The car will be strictly a road job. I want to rebuild the engine in a sensible way. I know a 1934 engine can quite probably benefit from a bit of tuning to take advantage of modern fuels and a car weight of say 2000 pounds. But nothing more expensive than what will be paid back in the form of better fuel economy (maybe) and better acceleration at and around the 30 to 60 mph range of road speeds. I'd prefer to use stock heads, milled a bit, as being probably the most practical modifications. Dual carbs maybe, maybe not. Adjustable tappets?

What would you do to the engine? Would you recommend using a later model engine? What year? Why? What needed change in mounts? What make and model telescopic shock absorbers are suited to a 1934 frame?

I am using the 1934 frame instead of a 1932 frame because it is dropped in the middle already, needs no complicated and perhaps makeshift changes to get the seats to a suitably low level.

Stoughton, Massachusetts Robert J. Whittier

I saw the "Mechanix Illustrated" article and liked it very much. Also your basic idea of sticking to a stock chassis.

Either method of lowering you mention is OK, altho the long shackles will require the addition of a track bar or "Panhard rod" as the British call it.

The hot-rod engine tricks usually do give very good gas mileage. Milled heads are not quite as good as specials; polishing ports is practically a waste of time; larger intake valves are better than 30° seats; a semi or ¾ cam is my preference for decent idle; adjustable tappets make amateur assembly easier but are not essential; and two dual carbs will actually reduce torque and bhp below about 3000 rpm.

I like the '49-'50-'51 V-8 engine much better because of the numerous improvements, including heavier crankshaft, better pistons, 3 3/16 bore, adaptability to Mercury crank with 4" stroke, much better cooling, and accessible distributor. Ford dealers have the necessary parts to adapt this engine to a 1934 chassis. Also, by all means "relieve" the block—the 1942 block (59 A) was partially factory "relieved."

Monroe shock kits are available for any year Ford, tho I personally prefer the Delco's I had on my late but unlamented '32.—Tech Ed

BLOWN FORD ENGINE

In your article concerning the Baldwin sport car (May 1950), you mentioned he used a 284 cu. in. full race Mercury engine and that he was going to mount a Roots-type blower on same. Was the increase in power and speed worth the additional cost of the blower?

I am considering taking a 1950 Ford Club Coupe with overdrive, changing rear axle ratio to 3.73 to 1, boring, stroking (284 cu. in.), '50 Merc crank, porting and relining, (3 5/16 x 4⅛), street use piston clearance, full race cam, 8 to 1 heads, Mallory ignition, Belond exhaust system, chopping flywheel to 24 lbs. and mounting a Roots-type blower.

We want to build a very speedy, powerful, and quick-accelerating road car—I want to be able to drive this car fairly slow in town, but don't care if idling is a little rough.

With 3.73 to 1 gear ratio and above engine set up, what horsepower and road speed will this car have, using 91 octane hi-test gasoline?

Coshocton, Ohio Edward L. Bonnette

I would say around 225 bhp is the most you can expect of a blown and modified V-8 engine, and the top speed of a '50 coupe so equipped would be in the neighborhood of 125 mph. This, of course, allows for street driving and use of 91 octane gasoline as you specify. I am sure you cannot run both a blower and high compression heads on 91 octane, and I am fairly sure a full race cam would give you very poor low speed running, very low miles per gallon ,and only a small gain in top speed when used with a blower.

Might I suggest you set up as follows: Bore 3 5/16", stroke 4.00", to produce 276 cu. in. The reason for not stroking the extra ⅛" is that with this power, you need the full rod bearing area, stiffer crank, and stronger rods of the standard Mercury shaft. Then use the stock '50 Mercury cam with .338 lift and 20° timing overlap. Put 30° seats on the intake valves, or taper bore the ports and use Olds Rocket 1¾" intake valves. Use stock Ford heads which will give approximately 7.4 to 1—about all you can stand with a positive manifold pressure of say 6 pounds per square inch gage. I haven't checked using 1¾" intake valves with stock heads, but you will probably have to mill out for side clearance and stock heads are too thin to stand very much in this direction.

I believe you are okay on the rest of the modifications.

I do believe you should not use a 3.73 axle. A 6.70-15 tire turns 740 revolutions per mile and in standard overdrive top, we have 2.89 × 740 = 2140 rpm at 60 mph or $^{125}/_{60}$ × 2140 = 4450 rpm at 125 mph. Thus, even with stock 4.10 axle (2.89 in overdrive), you would never reach the engine's peaking speed of at least 4600-4800 rpm even on the salt flats of Utah. The 3.73 axle would be much worse; i.e., at 125 mph, 4030 rpm in overdrive and 5750 in direct—both way off. The new 3.31 axle (used with Ford-O-Matic) is ideal without overdrive—125 mph = 5100 rpm which is just what you want.

I am of course assuming you use a blower, which will undoubtedly give much better all-around results than merely building a "full race" unblown engine. I have not talked with Mr. Baldwin for some time, so do not know whether he tried the blower or not. —Tech Ed

HOP-UP CROSLEY

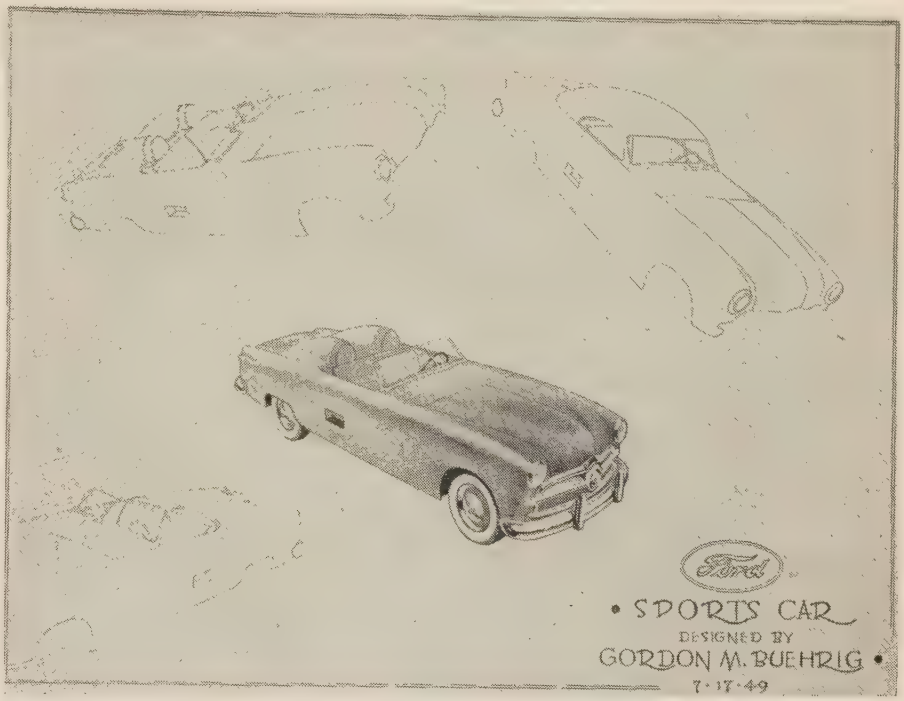
Could you supply me with technical data for "souping up" a Crosley engine?

Klamath Falls, Oregon James Becker

I have asked Bell Auto Parts to mail you their special literature on hopping-up the Crosley.

You can also install an Italmeccanica supercharger on a stock engine and get somewhat better results. I do not recommend both "hopping-up" and supercharging unless the engine is used only for racing.

Roughly, the first method will give a performance nearly equal to an MG, and the supercharging method will be slightly better than an MG. I am not a strong advocate of supercharging, but in this case, with only 44 cubic inches, I believe it is better to supercharge, since the cost is only a little more than modifications, and a stock blown engine should give less trouble and be more relable. —Tech Ed.



FORD SPORTS CAR

Gordon M. Buehrig, formerly Chief Body Designer for Auburn, Cord and Duesenberg, who designed the last Cord, is a friend of mine. We have talked at length about an American sports or competition car, and some time ago Gordon came up with an idea on the alteration of a standard 1949-50 Ford. I took his ball, and ran with it to the extent of drawing up some sketches of possible variations on a central theme. A photo of the sketches is enclosed. The data is about as follows:

Starting with a standard Ford club coupe, the top is cut off, doors welded shut, controls lengthened, dash moved back, front cowl and rear decks extended to close up the cockpit to one seat size, recessed step plates installed, new windshields (of various types) installed, head rest or rests added, etc. RESULT: A standard American sports car with all parts readily replaceable. Seat wide enough to seat three comfortably and handle four in a pinch. Lots of baggage space for everything anyone would want to take along on a long trip. The engine is, of course, ready to be souped, hotted, or anything else anyone might want to do with it to get "terrific" performance. The seat is, of course, moved back and lowered as desired.

Here, we would have a very clean looking job definitely in the sports class that would not cost "all getout" to build, and not require too much ability on the part of the builder. Numerous things could be added, subtracted, or created to further "customize" the job. If doors were desired, a convertible chassis and convertible body could be used, but the solid sides, airplane entry, elongated hood, etc., seem to make the standard club coupe conversion more attractive from the price as well as other angles.

Champaign, Illinois B. F. Harris, Ill.

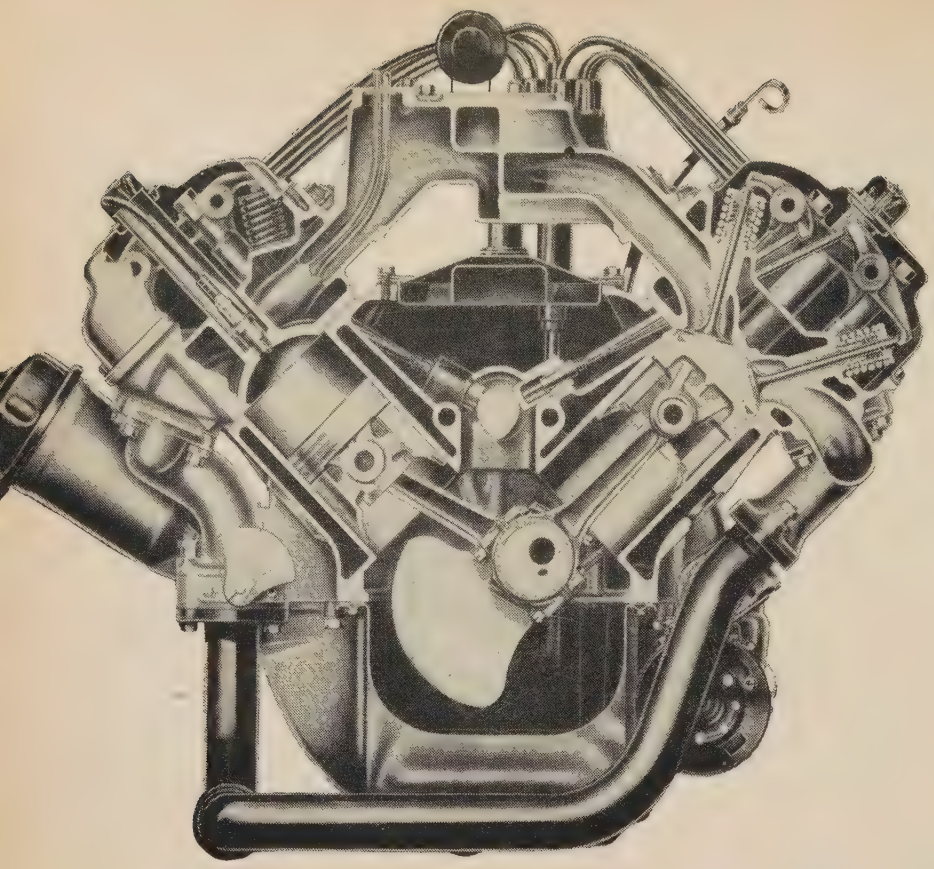
TWO-SPEED REAR AXLE FOR '41 GRAHAM?

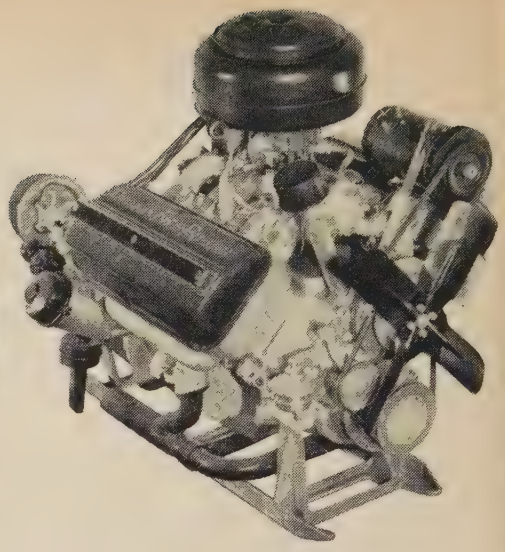
Where could I get a two-speed rear axle arrangement that would fit a 1941 Graham Hollywood Special with supercharger? Or, would you know if any three-speed transmission with overdrive that would fit this car? At present [it is] equipped with a three-speed transmission, but there is a narrow floor board housing that makes it difficult to insert the standard stock car types of transmissions with overdrive.

Seattle, Washington William H. Thomas

A two-speed axle is not possible with the Spicer rear end used on the Graham. You could use a complete Ford rear axle for which a few Ford dealers still have 2-speed conversions. There are many difficulties, however, (as well as cost) and a Warner gear overdrive would be much simpler and cheaper to install. If you can find a Kaiser-Fraser parts man or mechanic, who knows his cars, he will be able to tell you the exact parts to buy. You will, of course, have to shorten the drive shaft and rework the car floor for clearance.

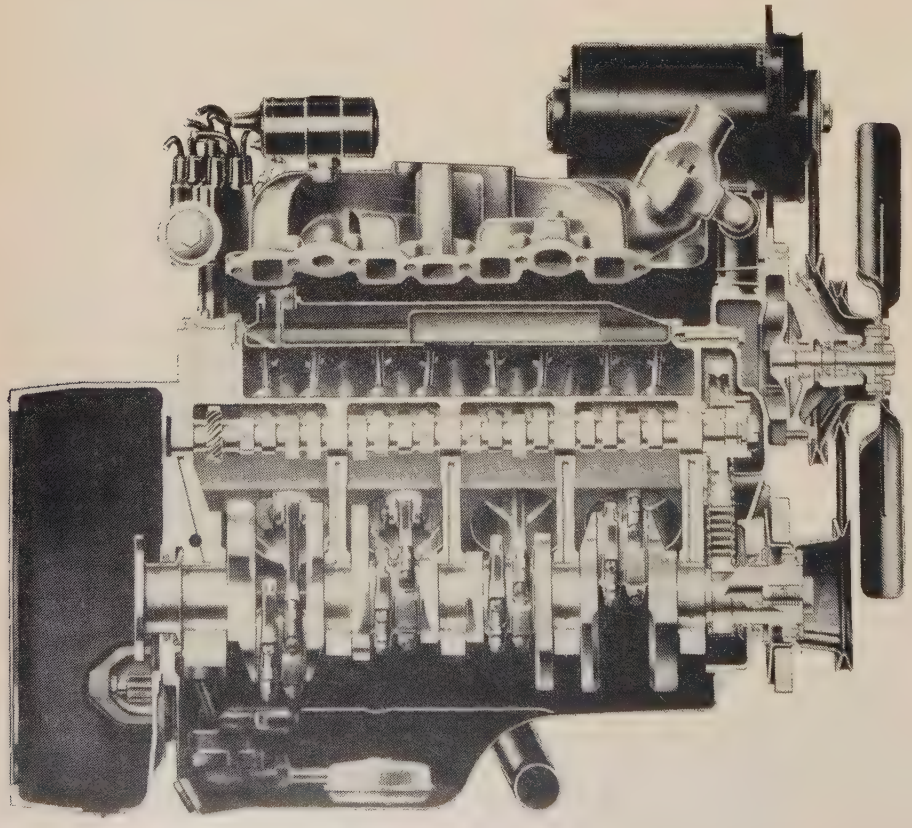
(Continued on page 28)





THE NEW CHRYSLER 180 HP ENGINE

The new Chrysler V-8 engine, just announced, will be available initially in the New Yorker, Imperial and Crown Imperial lines. Development work on the new engine has taken over five years, during which time Chrysler Engineering Division has investigated every type of high performance engine design, including all contemporary racing and sports car power plants.



Identical in bore, stroke, and displacement with the Cadillac V-8, it develops some 20 more horsepower, the manufacturer rating it at 180 hp at 4000 rpm. Actually, it will develop slightly in excess of 200 hp in its present condition. The 180 hp figure is taken with fan, water pump, air cleaner and generator (the latter turning free under no load).

While the illustrations are largely self-explanatory, there are several noteworthy features. Excellent aspiration is obvious, as the flow of gases in and out of the combustion chamber is virtually unrestricted. The combustion chamber itself is machined all over, thus presenting no rough surfaces for carbon to adhere to. Water jackets are exceedingly generous, both in the head and in the block, insuring adequate cooling. Valve diameter is very large, and valve lift exceptionally high.

Thrust loads are taken by the center main bearing, eliminating the possibility of oil leaks at the end main. The crankshaft has five main bearings and is fully counterbalanced. From a production viewpoint, it is interesting to note that the cylinder heads are identical and interchangeable, right and left, thus requiring only one cylinder head line in the factory. The intake manifold is also reversible, and symmetrical. A water-jacketed throttle body on the carburetor assures proper control of mixture temperatures. The camshaft is exceptionally large in diameter and runs in five large bushings lubricated from the main bearings. The ignition system is fully waterproofed, spark plugs being located at the bottom of a long tube thru the rocker arm compartment. Three rings are used on the slipper type pistons.

For comparison, specifications of both the 1950 Chrysler straight eight and the 1951 Chrysler V-8 engines are given below:

	1950 line 8	1951 V-8
Valve arrange.	L Head	O.H.V.
Bore	3¾	3 13/16
Stroke	4⅞	3⅝
Displacement	323.5 cu in.	331.1 cu in.
Comp. ratio	7.25 to 1	7.5 to 1
Max. torque	270 ft/lb @ 1800	312 ft/lb@2000
Max. B.H.P.	135 @ 3200	180 @ 4000
B.H.P./cu in.	.418	.544
Wt., eng. ass'y, less flyw'l & housing, dry	722 lbs	685 lbs
Wt., eng. ass'y, plus flyw'l and M-6 trans.	1002 lbs	933 lbs
Total wt. per hp	7.58 lb/hp	5.18 lb/hp

BOOK REVIEWS

"Where's Your License?"

Century House — by W. J. Hickmott, Jr.

This is one man's experiences in the good old days of motoring. After reading the book, we wonder: Have you ever gazed out the driver's window and been confronted with one of your own wheels passing you? Such happenings abounded in the early days of motoring and upon starting a journey one prepared for not only tire trouble but the possibility of clutch, brake, wheel or engine trouble as well. However, the fellowship of the road in those days was such that the first motorist upon the breakdown scene stopped to offer assistance . . . a far cry from modern motoring where the mere stalling of an engine in traffic is enough to start a crescendo of horns. Today, the only group still practicing such road courtesy is the motorcyclists, their unwritten code being, "never pass another cyclist in distress."

For those desiring an accurate account of early motoring, this book can be recommended. The photos used are rather uninteresting and poorly reproduced.

"Racing Voiturettes"

Motor Racing Publications — by Kent Karslake

"Voiture" is French for vehicle or motor car —thus, "Voiturette" means a **small** motor car. This book is devoted to relating the history of small car racing from its inception in 1895 to the mid-1920s. Many readers may find **too** much detail in Mr. Karslake's text but here is information, technical and historical, contained in no other book I have yet read. There is an abundance of excellent photographs of some of the most incredible vehicles the world has ever seen. Modern motorists who hesitate to consider buying anything with less than 6 or 8 cylinders should ponder over the 1909 Sizaire-Naudin race car which had a 2.3 litre engine of ONE cylinder, boasting a stroke of 10 inches! The 1910 Lion-Peugeot was a 2.8 litre job with two cylinders and a stroke of 11¼ inches! At 2200 rpm this engine had a staggering piston speed of 4,042 feet per minute. The photographs show that it took a mighty tall driver to see over the hood of one of these weird machines . . . most men drove by merely trying to see **around** the side of their monumental engines. This is but an indication of the fascinating bits of motoring lore to be gleaned from this superb new addition to automotive literature. Here is, indeed, a book that every collector of motoring literature MUST own—there is nothing to take its place, and I have added it to my own library with real pride. —ROGER BARLOW

"Monte Carlo Rally"

G. T. Foulis & Co., Ltd. — by Russell Lowry

This little book about a long, cold drive is really tops in motoring literature. The only disappointing part, for me, was that the car used by the author was a British V-8 Ford rather than some more interesting vehicle. The drawings, as well as Mr. Lowry's amusing tale of his first "go" at the famed 2000-mile Monte Carlo Rally, will produce many a chuckle in all but the most mutton-headed. After reading this volume, I am sure that most enthusiasts will be filled with a burning desire to also have a "go" at something similar. There is no point in my telling you readers more about this book—don't sit there, do yourself a favor, go out and buy it! And I'll wallop the guy that says the British have no sense of humor—after reading this book I bet you'll offer to help me. —ROGER BARLOW

"Slaughtered Lovelies"

(A 25c Gold Medal Book) — by Don Stanford

Sports car enthusiasts who are also detective story fans get double-for-their-money in this fast moving, who-dunit. The cover shows a bosomy wench lashed into the passenger's seat of a speeding red M.G.—drawn correctly in every detail (both the wench **and** the M.G.). The gratifying feature of this good-as-average detective story is the big part played in the plot by various foreign cars. Besides starring the M.G., an XK-120 Jaguar and a Daimler get big supporting roles from a writer who really **knows** about cars. Believe-it-or-not, and strange-as-it-seems, not a single erroneous statement about the cars or their performances and handling qualities can be found. No M.G. or Jag enthusiast should miss the satisfaction of reading about people who speak so knowingly and enthusiastically about their favorite cars. (And there is plenty of blood, mayhem and sex for those with only an incidental interest in sports cars.) —ROGER BARLOW

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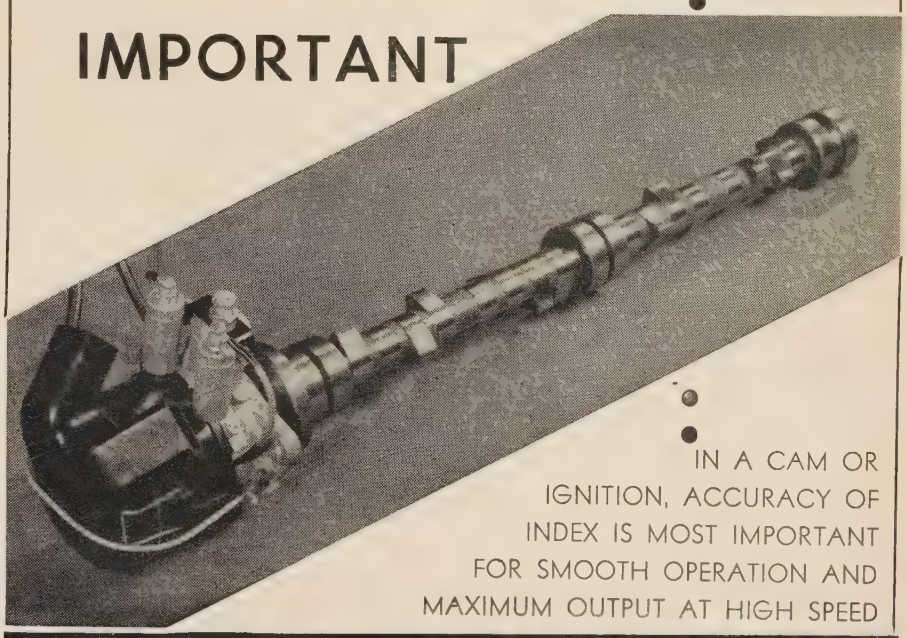

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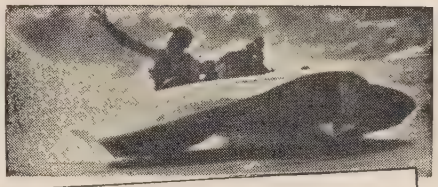

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PHOTOGRAPHY

Conducted by Karl A. Barleben

FILTERS AND LENS SHADES

Filters and lens shades are two extremely functional accessories that every photographic enthusiast should make use of. These tools are part and parcel of the professional's gear, and there is good reason . . . with them, many effects can be produced which otherwise would be impossible. Filters control the color rendering of the scene in black-and-white photography, while a lens shade serves to protect the lens from stray, unwanted, and non-image forming light (which tends to rob the negatives of brilliance, snap and contrast).

The most commonly used filters for photography are yellow, orange, green and red. Most shots can be handled by a yellow filter, and this should be the first one to purchase, since it can be used with both ortho and pan films (the green and red filters require pan films only). It is well to realize that a large array of filters is not necessary. It is more practical to have one or two well-chosen filters and learn to use them intelligently; in fact, by careful use, they can be made to produce most of the effects the other filters will provide.

Filters should not be used indiscriminately, but rather only when and where they serve some useful purpose. Some amateurs never use filters; others use them for every shot. Both groups are missing the point.

A filter is more than a pretty piece of colored glass. It is a highly precision optical device incorporating certain characteristics. It does not add anything in the photographic process . . . on the contrary, it takes away, or blocks certain light rays from reaching the lens.

Filters are used primarily for securing a truer color rendering in monotone (where this may be required) and for reproducing more natural sky effects in the photograph. For example, one of the most common uses of a filter is to darken the sky somewhat, so that it does not appear chalky-white in the print. The yellow filter holds back some of the blue, permitting a better rendering of the white clouds. Filters also tend to reproduce objects of their own color in lighter tones in a photograph . . . to illustrate, if you are photographing a red car and, for some reason wish it to appear lighter in tone in the finished photograph, a red filter over the lens will achieve this result.

Physically, filters come in varying types. Two broad groups are in common use; those consisting of a gelatin sheet cemented between two pieces of optical glass and those made of solid, optical colored glass. The cemented type possess greater purity as to color and transmission, but tend to change in time and with use, and must be handled very carefully as the cement may melt and run under excessive heat. The solid glass type are more durable, since the color, which is inherent in the glass, does not fade or otherwise change and will last forever, barring accidental breakage.

As was previously mentioned, every filter has a "filter factor" which represents an increase in exposure over normal to compensate for the light that the filter prevents from reaching the lens. In other words, a "2-x" (two times) filter factor requires a doubling of the exposure, or expressed differently, opening the lens diaphragm one stop, or halving the shutter speed (as from 1/100th to 1/50th second). The filter factor is important, since ignoring it will definitely result in under-exposed negatives.

Not only does each filter have a different factor, but each filter will have a different factor when used with different types of films. For this reason, filter factor charts should be consulted.

Over-exposure should be avoided when using a filter, as the resulting picture will appear as tho no filter were used. In other words, over-exposure on filtered shots tends to nullify the effect of the filter. By the same token, slight under-exposure tends to increase the effect of the filter. Make duplicate shots with and without filters and compare the results. A few rolls thus expended will pay dividends in improved future results.

We can hardly discuss filters without also bringing in lens shades, since lens protection is of tremendous importance, with or without filters. A lens shade serves to prevent unwanted light from striking the lens. As the front of the lens is not flat but curved, it stands to reason that it is prey to light rays from practically all directions. Such rays affect the photographic film adversely by fogging or veiling the image, robbing the negative of brilliance, snap and contrast.

The shade's function is recognized by everyone when the camera is aimed towards the light, but few realize that even with flat lighting, stray light is reflected back into the lens. For this reason, a lens shade should be used over the lens for each and every exposure made, whether outdoors or indoors; daylight or at night.

Modern lens shades come in a variety of styles and types. Generally speaking, the larger the shade, the more protection it offers and the more closely the camera may be aimed towards the light source, but in the interest of convenience in carrying, most shades are of conservative proportions. If you are only now starting to purchase equipment of this sort, it is suggested that you buy a shade which incorporates a filter holder. It is essential that the filter be positioned perfectly flat and true before the lens. The utility of shades is great and their worth vastly exceeds their moderate cost.

Invest in a couple of good quality, well-chosen filters and a generous lens shade . . . your photographic results should improve.

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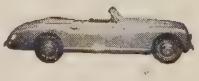
IMPORTED AND CUSTOM MADE  **SPORTS CAR EQUIPMENT!**

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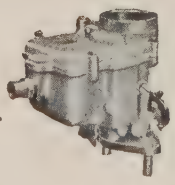

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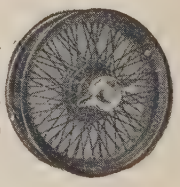

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CLUB ACTIVITIES

FOUR CYLINDER CLUB

A Rally and Gymkhana was held on the Santa Anita parking lot by the Four Cylinder Club in December. Events included a timed run at a given average speed, a timed

obstacle course forward, and reverse, a manouverability test, and a "Le Mans" shoe race. Sixteen drivers entered, with 14 cars, including Austins, MGs, Morris Minors and Renaults.

Results:

1st—Bill Friedauer — MG TD
885 points out of possible 1000

2nd—Oliver Billingsley — Morris Minor
835 points

3rd—Chuck Smith — Austin A40
825 points

On January 21 a 212-mile rally was held, the furthermost check-point being Palm Springs Airport, where the Douglas Aircraft Air Exhibition was in progress. Contestants viewed the huge Douglas C-124, midget race planes in action, gliders, a jet parasite fighter, and other Air Force exhibits. Secret checkpoints were established along the route and it was necessary to maintain an exact average. That the contestants did so with skill is clearly shown by the remarkable scores established.

The results:

First	Bill Howard	MG "TC"	.006 mph error
Second	Doug McGarry	Austin A-40	.039 mph error
Third	Chuck Smith	Austin A-40	.21 mph error
Fourth	John Orlando	MG "TD"	.39 mph error

On January 27 an election of officers was held. John E. Foster, founder of the club, was elected President; Bill Friedauer, Vice-President; Lu Ann Privett, Treasurer; Gloria Dearborn, Secretary. Future plans include a special rally to be held February 18.

NAVIGATOR'S NIGHTMARE

The Los Angeles Region of the S.C.C.A. held a never-to-be-forgotten rally around and thru the Santa Monica mountains recently. Unfortunately, the trickiness of the course resulted in the rallying becoming more like a road race in parts, but other than upsetting a few irate home-owners in a residential section, no damage was done. In the future, however, for the benefit of all concerned, such events will be held away from such areas. There were 50 entries who started over the 40-mile route, many of whom never did finish the required course. However, everyone had fun and those who did finish deserve a great deal of credit.

Results:

1 Hr. 55 min. (22½ min. late)

1. Bob Coogan—W. Olson — Sunbeam-T.
2. Richard Greer — MG TC
3. Thatcher Darwin — Beetle
4. Carlyle Blackwell — MG TC
5. Barney Jackson — MG TC
6. Bill Cramer — MG TD
7. Bill Maxey — MG TC
8. Lanz Sawyer — MG TD
9. Jim Van Trees — MG TC
10. Phil Hill — Jaguar XK
12. Elaine Bond (first woman) — MG TC
20. Betty Darwin (2nd woman) — Crosley

Secret check was at the start of Laurel Canyon.

A party was held at Singapore Spa, with the first three places receiving trophies.

ARROWHEAD F.C.C.

The Arrowhead Foreign Car Club, at its first meeting of the new year held at Club Oaks, elected the following men to office:

President, Lee Halstead
Vice President, George Conrey
Secty.-Treasurer, Ed Snidecor

It was with genuine regret that the membership saw Emerson Symonds, who was vary active in the founding of the club, relinquish the presidency, but they were eagerly looking forward to a year of excellent leadership from the new president.

After the business portion of the meeting, Mrs. G. Monroe showed some very interesting color slides of recent motor events held in Southern California.

S.C.C.A. ANNUAL MEETING

The Sports Car Club of America, an organization of 1,200 amateur lovers of fast thoroughbred automobiles, held their Annual Meeting at the Henry Hudson Hotel in New York City on the afternoon and evening of January 20. The business meeting in the afternoon was attended by well over 200 members representing all parts of the United States. The following officers were elected:

President, D. Cameron Peck, Chicago, Ill.
Vice President, Frederick G. Wacker, Jr., Chicago, Ill.
Secretary, Phillip J. Cade, Winchester, Mass.
Treasurer, Dr. Henry R. W. Finn, Jersey City, N.J.
Editor, Karl F. Kucker, Washington, Conn.

275 members and their wives attended the evening dinner meeting and witnessed the award of two major trophies: The Thomas McKean Memorial Trophy, presented annually to the club member performing an outstanding act of good sportsmanship during the year, was awarded to George G. Huntoon, North Miami, Florida, in recognition of his action in voluntarily surrendering his own chances in the Seneca Cup Race at the Watkins Glen, New York, Grand Prix, September 23, 1950, when he stopped to render aid to a competitor who had gone off the road. The Woolf Barnato Trophy, donated to the Sports Car Club of America by Jack and Helen Stack of New York City in memory of the great English sportsman and Bentley driver, which is awarded annually to the member contributing the most to the Sports Car Club during the year, was given to Briggs S. Cunningham, Greens Farms, Connecticut, who, in June, 1950, carried the American colors in Sports Car Club racing at the 24 hour Le Mans race in France after a lapse of many years without an American entrant.

SOUTHERN CALIFORNIA REGION SPORTS CAR CLUB OF AMERICA

The Southern California Regional Group of the Sports Car Club of Aemrica has just announced the 1951 competition schedule for events to take place in the Southern California Region.

The schedule is as follows:

February 25, 1951—Second Annual Spring Rally (Reliability Run)
April 22, 1951—Spring Running of Sandberg Speed Hill Climb
June 17, 1951—El Segundo—Standing Start ¼ Mile Time Trial
August 12, 1951—Gymkhana
October 14, 1951—Fall Running of Sandberg Speed Hill Climb
November 10, 1951—Annual Dinner and Concours D'Elegance
December 9, 1951—English Type Trials Events
January 12, 1952—Annual Awards and Installation of New Officers Dinner

It is hoped that this schedule will offer a varied choice of competitive events to stimulate the interest of all sports car enthusiasts.

The 1950 program, with increasing entries as each event was staged, was declared a success. It is believed by the officers of the Southern California Region of the Sports Car Club of America that the 1951 schedule will offer even more interest to participants.

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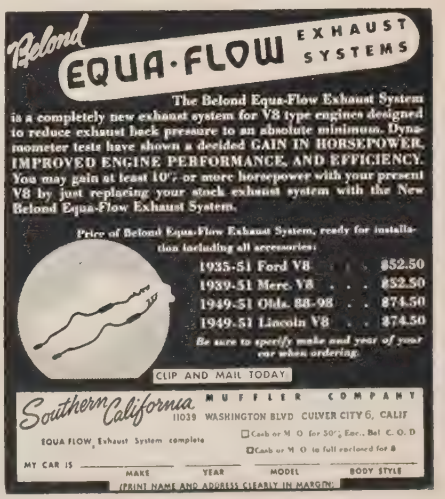
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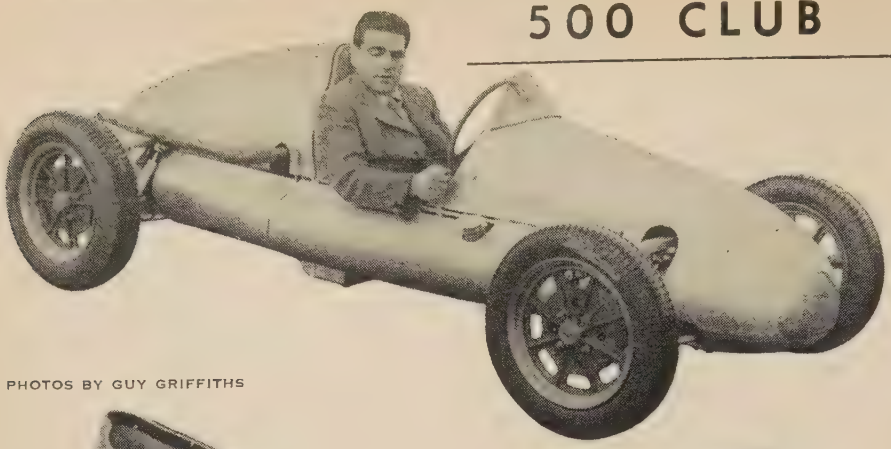
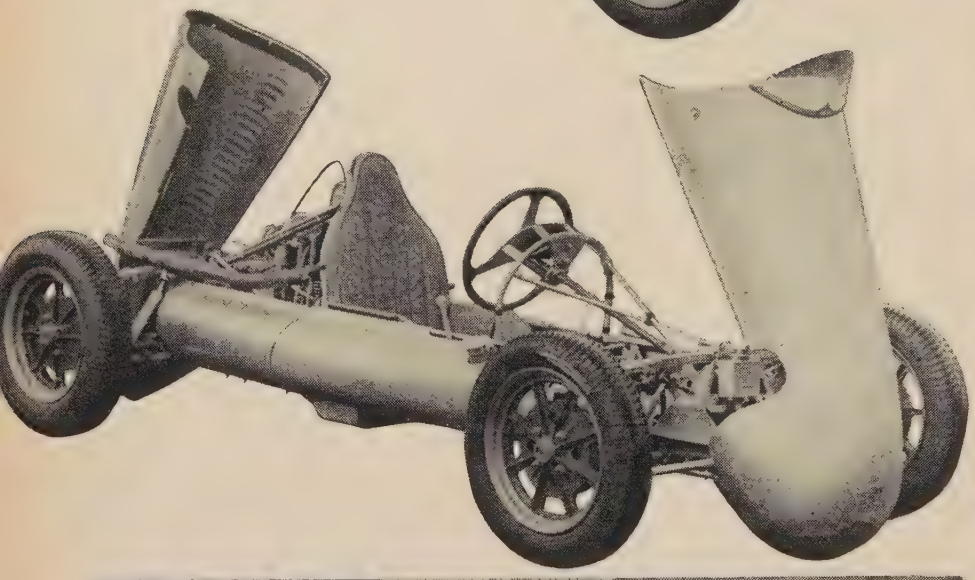
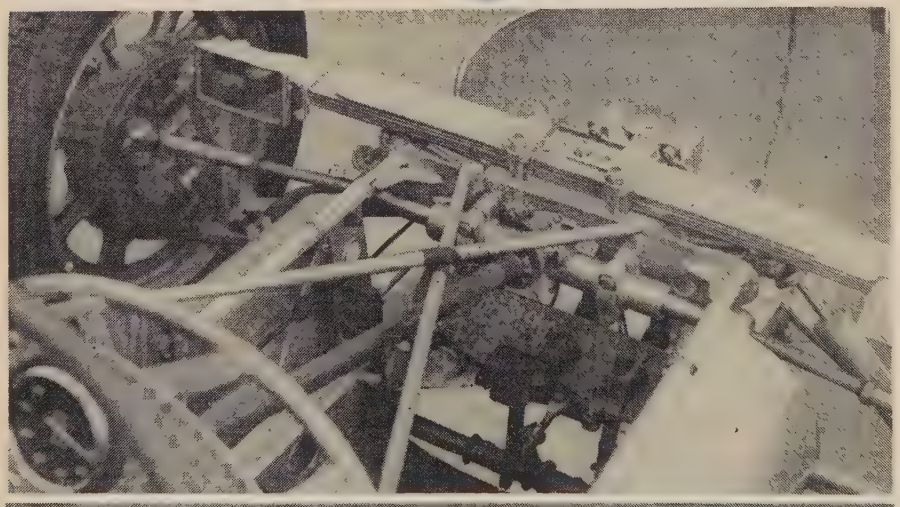
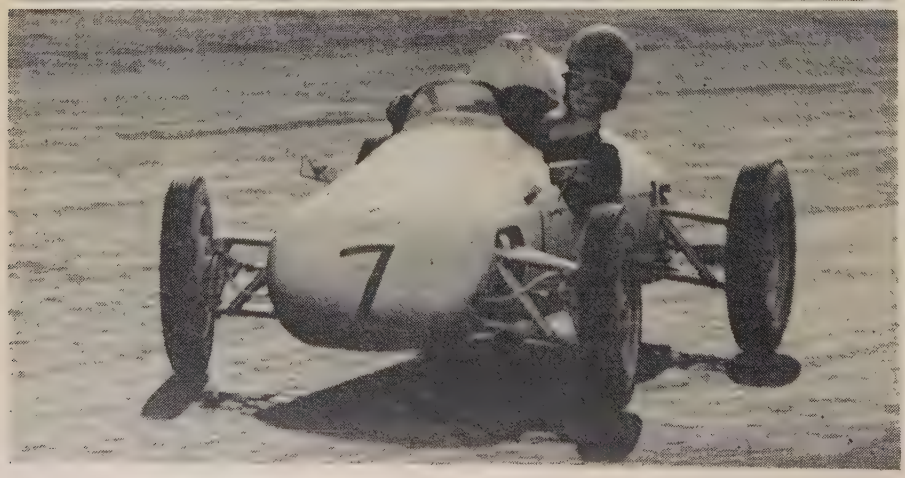


PHOTOS BY GUY GRIFFITHS

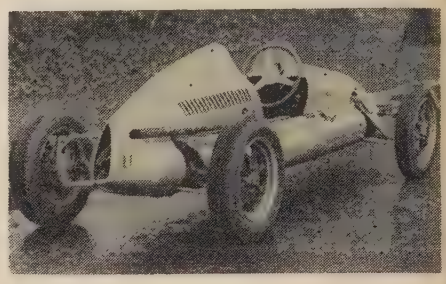






1951 COOPER MARK V

The 1951 Mark V Cooper features many refinements and modifications of the already highly successful Mark IV model. The completely new chassis design now has rack and pinion steering, and side mounted gasoline tanks. As can be seen from the illustrations, the new body is hinged front and rear to provide quick and easy access to all parts requiring service. The time proven running gear of earlier models is continued. The J.A.P. pushrod ohv engine is cataloged as standard equipment, but the dohv Norton can also be fitted, giving somewhat better all-around performance.



Cooling air is obtained thru a scoop beneath the car just below the driver's seat. The oil tank of the dry sump lubrication system is mounted as a deflector for the air, thereby lowering the oil temperature.

The 1100 cc J.A.P. V-twin can also be fitted to this car for Formula 2 racing, hill climbs, etc. Developing over 90 hp, with a total weight of not much more than 600 lb., the acceleration is breath-taking, and a maximum speed of over 120 mph is easily reached.

The Cooper Company, despite its relatively recent origin, has reached such a stature that it is now one of the best known manufacturers of racing cars in the world. Coopers are successfully racing as far away as Australia, and dozens are entered in each Continental Formula 3 race. 1951 promises to be the most interesting year for 500 cc racing, with new competition from Italian and German cars to threaten Cooper's domination.

BOOK REVIEW

"500 cc Racing"
G. T. Foulis & Co., Ltd. by Gregor Grant

One of the very first books to be written about this newest and rapidly growing form of motor racing which came into being in England after the last war. Mr. Grant has produced a very readable and comprehensive history of 500 cc racing to date and includes much technical information on the various Continental "500s" as well as the British types. Perhaps this book will spur American enthusiasts into more productive activity and so help to bring something like Formula 3 racing into being in the U. S. —ROGER BARLOW

KIEFT SETS RECORDS

Driven by Stirling Moss and Kenneth Gregory, at world-famous Montlhery track in France, the Kieft (shown at left) has broken many world's records. Fitted first with a 348 cc Norton engine, and then a 500 cc Norton, the following records were set:

International Class I (500 cc)

50 Km:	90.06 mph	50 miles:	90.63 mph
100 Km:	90.87 mph	100 miles:	91.40 mph
200 Km:	88.50 mph	200 miles:	86.99 mph

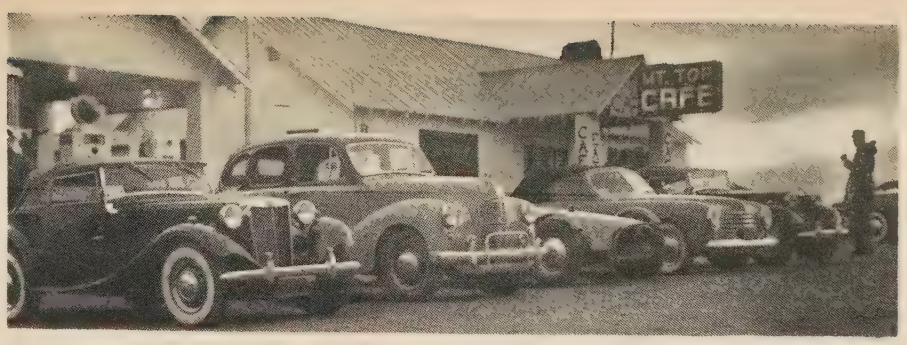
One Hour 91.34 mph

International Class J (350 cc)

50 Km:	78.25 mph	50 miles:	78.63 mph
100 Km:	78.93 mph	100 miles:	79.52 mph
200 Km:	76.88 mph		

One Hour 79.21 mph

All-Night Trial



Little did I know what lay ahead when my Morris Minor was enrolled in the "Press On Regardless" Trials sponsored by the Southern California Sports Car Club. Scheduled for Saturday night, 420 miles of an undivulged course, with seven control stops, were to be covered in less than 12 hours. Sounds easy, I thought.

We—Anne as navigator, the Morris, and myself—arrived late. Barker Brothers (a leading Los Angeles furniture store) had loaned their huge parking lot as a starting point. Watches were sealed, control cards passed out, and starting positions assigned . . . we drew #19. Officiating at the start were Officers Ralph Wilder man and "Pinky" Meredith of the Los Angeles Police Dept. A friendly crowd was on hand.

At the moment of 9:51 pm (our departure time) we were signed out, given the route instructions, and waved on our way. En route to Long Beach, we passed Tony Anthony at a secret check point . . . right on time. Via Huntington Beach . . . 'twas here that Anne found the map was too small to read . . . to Laguna Beach. Up Laguna Canyon (nice curves) to Highway 101. Time allowed to Control #1, located 1 mile short of San Juan Capistrano, 2 hours, 20 minutes (Joseph Thrall and Ron Davies, officiating). We misread the clock and arrived 7 minutes late. (5 points penalty for each minute late or early.)

Up to 5,000 ft enroute to Lake Elsinore (wonderful curves). Mr. and Mrs. T. Gwaltney were at Control #2, 200 yards past the tiny Aguanga Post Office. Time allowed 1 hr, 45 min . . . I loused up the refueling and was 2 min late.

Thru Anza, Palm Desert, and more mountain roads to Palm Springs where George Carey, Jr., checked us in at Tanners Garage for a 10-minute fueling stop. We were on time!

50 miles of the worst "washboard" dirt road in the world . . . 40 mph was tops for us . . . then a long stretch of straight road where Jags really made up lost time. David Mosbacher stood beside a welcome fire as he signed our card at Deadman's Point (Control #4) . . . time allowed, 1 hr, 40 min. We were 49 minutes late!

Via "San Berdoo" turnoff to Hwy. 66 and 138 to Mountain Top Cafe for an overdue breakfast. Time allowed, 42 minutes . . . we were 17 minutes late—too many grades. Officers Wilderman and Meredith conducted the parking test while Tony Anthony and Mr. and Mrs. Forbes-Robinson checked us in. (Control #5)

Off again . . . snow and ice thru Big Pines park . . . Anne was car-sick on daylight curves. Up to 6000 feet and then down thru Valyermo, Pearblossom, Palmdale, and Bouquet Canyon to Saugus Control where Bill Pringle checked us in. (Control #6) Time allowed, 1 hr, 50 min . . . we were 14 minutes late.

Thru Van Nuys and North Hollywood to Burbank where the final control was located at Bob's Big Boy Drive-in parking lot. Stan Mullin and Jack Armstrong checked us in, 1 hour allowed . . . and we were on time! After 12 hours and 30 minutes of driving, we had accummulated a penalty of 467.5 points to capture last place. Alex Cooper made a tape recording of the finish which was later broadcast on his KXLA program.

Strange, isn't it, how much fun there is in driving all night over an arduous route . . . providing it's a game and not a job?

—EDITOR

RESULTS

	Name	Car	Points Lost
1.	Bill Cramer	XK-120	2.5
2.	"Bud" Wittenberg	XK-120	6.5
3.	Don Parkinson	XK-120	8.0
4.	Louis Scroggins	XK-120	16.0
5.	Dan Eames	MG-TD	19.0
6.	Carlyle Blackwell	MG-TC	37.5
7.	Don Atkinson	XK-120	39.5
8.	Jerry Hill	MG-TD	43.0
9.	John Von Neumann	Talbot-Lago	43.5
10.	Hunter Hackney	MG-TC	44.0
11.	Harry Borde	MG-TD	75.0
12.	W. J. Salter	Austin A-40	80.5
13.	Ted Cannon	Cannon Spl.	99.5
14.	H. W. DeMott	Sunbeam-Talbot	100.0
15.	Burton Harrison	MG-TD	104.5
16.	David South	Jaguar Mk IV	105.0
17.	Senter Stuart	MG-TD	186.5
18.	David Albee	Austin A-40	228.5
19.	James Hulsey	Simca Sport	249.5
20.	Dorothy Deen	Simca Sport	330.0
21.	David Frazeur	MG-TC	380.0
22.	Oliver Billingsley	Morris Minor	467.5

XK-120 and Talbot refuel at Palm Springs.

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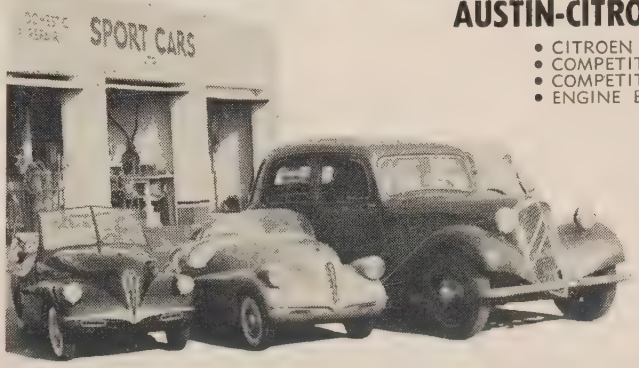

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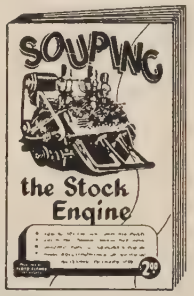

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TECHNICAL CORRESPONDENCE

(Continued from page 21)

Incidentally, with an overdrive, you should use an axle ratio of around 4.55 to 1 instead of the stock 4.11, or I think you will be disappointed. By that I mean, 4.11 times the overdrive ratio of .722 or .700 (depending on year built) gives an overall ratio of under 3 to 1 which is far too low for good top speed or decent acceleration. Tech Ed

TOP SPEEDS

I would like to know the official speed of the hopped-up Mercury or Ford engines in a recent speed trial test which I read of in your magazine. Can you tell me the top speed of the Cadillac?
Yuma, Arizona — John Gospednetich

I am not quite sure as to just what you want. However, hopped-up Ford and/or Mercury engines, installed in perfectly standard cars, often clock over 120 mph at El Mirage dry lake. The best stock Cadillac times run 95 to 96 mph, and I watched one do 90.00 mph.

One of the British magazines road tested a 1949 ohv Cadillac 4-door sedan, equipped with Hydramatic transmission and standard 3.36 axle ratio. Clocked after a run of over 2 miles, on the Jabbeke-Aeltre super highway in Belgium, it gave 99.4 mph as an average of four timed runs—two one way and two in the opposite diriction.

If this doesn't answer your question, don't hesitate to let me know and I'll try again. — Tech Ed

ENGINE COMPARISON

Could you briefly compare engines of Sunbeam Talbot 90 with Willys Hurricane and Meyer-Drake 270.
Waterville, Maine — N. Eastman Webber

Here is a comparison table of the three engines:

	1951 "Hurricane"	1951 Sunbeam-T	Meyer-Drake
No. cyl.	4	4	4
Bore	3.125"	3.19"	4.3125"
Stroke	4.375"	4.33"	4.625"
Displ.	134 cu. in.	138 cu. in.	270
Bhp	72	70	325
Rpm	4000	4000	5000
Comp. ratio	7.4	6.45	12

The size similarity of the two production engines is obvious. The L-head Willys engine weighs 425 lb., the new F-head will be about 25 lb. more. Incidentally, the cost of the Meyer-Drake engine is approximately $5000 without carburetors ($65.00 each) or magneto ($300).— Tech Ed

CURVED WINDSHIELD

I [have been] building my own car for the past seven months . . . using a 1936 Ford coupe body. How can I put a curved windshield in my coupe body without too much work?
Bay Shore, New York — John Zubol, Jr.

Your question is a "toughie." In the first place, it's bound to be a lot of work, especially if you have a hard top car.

I would suggest, first, some careful measurements of the '36 cowl section, even making a template to fit it. Then, with template and tape measure, tour the junk yards specializing in late model wrecks. You may be able to find a car with a curved glass that isn't too wide and actually substitute the complete cowl, glass, corner ports, etc., from the body mould line up. Failing in this, your only alternative is to buy a curved windshield glass, cut to the correct overall width, and have an experienced body man cut and hammer your present cowl to fit. There are many "custom" body shops out here who can do it, but, of course, it isn't cheap.

As an afterthought, look for a 1941 Studebaker sedan coupe. It has a somewhat unique V windshield with flats joined by a radius at the center. This windshield is narrower than the post-war cars, has much better visibility than, say a 1950 Chevrolet, and is easy to cut down. —Tech Ed.

WANTS ECONOMY

I am interested in increasing gas mileage on my '50 Ford V-8 by souping . . . have started out with a dual set of pipes, am now wondering if I should install dual carburetor and manifold.
Chicago, Illinois — F. Ranieri

The easiest means of getting more gasoline mileage is by increasing compression ratio. The difficulty with the scheme is that mileage gain is nearly offset by necessity of using premium fuels, and if you go too high, a retarded spark is required even with ethyl, cancelling the potential gain.

I have 8.0 to 1 (milled heads) on my own '49 V-8 and about 8.5 is the limit even with aluminum heads and good fuel. The dual pipes are also a help, but only after the engine is warm, per my article on page 25 of the December issue.

I seriously doubt if two carburetors will show anything but an increase in fuel consumption. You can try one size smaller jets in the stock carburetor, but watch for too lean a mixture, evidenced by a serious loss in performance, and signs of overheating, short plug life, and burned exhaust valves. Tech Ed.

HUDSON SPEEDSTER

I have the opportunity of buying a 1931 Hudson Roadster. Because its body is similar to an Auburn Speedster, I think it does have possibilites for improvement.

Can you tell me more about the car and if you think it worth bothering with? The car I refer to has a torpedo back. Was this a straight production roadster or custom? I never knew Hudson put out this body style till I saw it.
Burbank, California — Anthony Scala

I have seen two Hudson speedsters of the type you mention, one in 1937, and the other about 2 years ago in Hollywood. The first speedster this company built was in 1927 on the Essex chassis only. None were built in 1928, but in 1929 they built a few similar cars, again on the Essex only. The 1929 body differed from the 1927 in having a one passenger rumble seat. None were built in 1930, but in 1931 a speedster was shown in the Essex catalog having considerably more flair to the boat-tail sides. This is the body to which you refer, and beyond knowing that it was available, I know very little about it.

In 1927, "Automotive Industries" described the speedster and also a clever modification to the transmission (available as an option) which eliminated the usual second speed and made it an overdrive. You started in low, shifted to high, and then on the highway shifted to SECOND. My recollection is that the overdrive reduced the overall axle ratio from 4.09 to 3.29, a ratio of approximately 0.65.

In 1930 the British "Autocar" road tested a Hudson 8 roadster (not the speedster) equipped with this overdrive transmission. With the standard axle ratio of 4.636 the clocked top speed was 70 mph. Using the overdrive it could do no better than 69 mph. Speedometer readings were over 80 mph, incidentally.

I have always liked this body in any of its 3 forms and have the following suggestions: First, you might try to get a 1932 or 1933 Hudson 8 engine, which gave 101 bhp instead of the 80 in 1930 or 87 in 1931. The 1930 "8" had a 2¾" bore, the 1931 "8" was 2⅞", and the 1932 and 1933 "8" was 3". In all other respects the engines were identical except for minor details. I would not recommend the 1929-1930 overdrive as it is very noisy and too drastic a ratio. A 4.27 axle ratio was available for the 1931 Hudson and you probably have that ratio.

A second alternative would be to use the 1934 thru 1951 Hudson 8 engine, having the same bore and stroke as the 1932 engine. I doubt if this would install quite as easily as the earlier "timing chain" engine, but it is, of course, somewhat preferable.

There are 4 basic transmissions possible. The 1927 thru 1931 type, with sliding spur gears (the 1931 had minor changes and a free-wheel was available as an option); the 1932 type, having helical 2nd speed gears, free-wheeling, and identified by its large size and unique free-wheel control built into the shift ball; the "Terraplane" type, built from 1932 thru 1940, or the 1941 to 1951 type. The "Terraplane" type had several re-designs and the 1932 and 1933 models were strictly N.G. In 1940 a Warner overdrive was available for the first time, and is a possiblity since the 1931 frame did not have an X-member to give you installation problems. The 1941 to 1951 has had several important revisions thru the years and various gear ratios as well as overdrive are available.

The third major possibility is probably the best as well as most expensive; that is, to install another make engine and gearbox. I would suggest a Ford-Mercury V-8, but even a new ohv Cadillac would entail no weight penalty. Tech Ed.

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DETROIT DIRT

Most talked about item around Detroit, besides the defense program, is the new Chrysler engine. Developing 180 hp—or 20 more than the Cadillac, the new V-8 is identical in bore and stroke with its General Motors counterpart. G.M. is probably scratching around now with head designs in order to equal or better the Chrysler engine in output with the Cadillac. Chrysler Corp. is rumored to be readying two more V-8's for the Dodge and DeSoto; smaller versions of the Chrysler engine, developing 135 hp and 145 hp, respectively. Plymouth is said to be running dynamometer tests on a 210 cu in. 6, with 7 main bearings, a head design similar to the Chrysler, and developing 130 bhp at 4000 rpm. This engine reportedly will be used in the 1952 Plymouth, when and if it is built.

Stylewise, the new Chrysler Corp. line is very similar to the 1950 models, with some face-lifting to make it similar in appearance to the competitive G.M. models. The '51 Plymouth, already seen, resembles the Chevrolet in many ways, the Dodge is not unlike the Olds and Pontiac, the DeSoto very similar to the Buick with a picket fence grille growing from the top of the front bumper and Buick's familiar plateau on the bonnet and nose. The Chrysler has a square grille opening—with no grille, and much fancy chromium around it, giving the appearance of a modernistic fireplace. Bodies thruout the line have been widened at the windshield, windshield posts have been slimmered up and rear windows have been increased in area. The 1951 Chrysler Crown Imperial will have, in addition to the new engine, hydraulic steering, improved disc brakes and a torque converter transmission in place of the standard Chrysler "Gyrol Fluid Drive" with their usual M-6 transmission.

The Nash line for '52 will probably be very different from the present model in looks, as Nash's retaining of Pinin Farina as consultant is expected to influence greatly the styling of the new car. Farina's first sample cars are said to be in Detroit—and those that have seen them are quite favorably impressed. They are definitely along the Italian school of design—supposedly similar to the recently announced production Alfa Romeo—also a Farina design.

The Nash-Healey, which has attracted much comment from sports car enthusiasts, will be marketed by Nash dealers next year. Price will probably be around $3500-$3800. One Nash Healey is in Detroit now, being photographed for advertising purposes. It is hoped that other manufacturers will take note of Nash's recognition of the potential sports car market, and possibly start giving the car-buying public a choice of American sports cars.

Hudson's new Hornet line is quite successful, exceeding their original sales estimate. This car, while quite expensive, is very hard to obtain. It is an extremely able performer, having outstanding acceleration and a very high top speed. Not too much is known of Hudson's plans for the future, as is true of the entire industry. Defense programs will probably take over much of the engineering and designing talent in Detroit in the next year or so, thus delaying development of a number of new programs. Should a full-scale war develop, we can expect conditions similar to the 1942-1945 period. Most companies plan tho, to carry on development work on their current projects up to the very last minute. The present material shortage situation will have a marked effect on the cars to be produced in the next few months, however. Chrome plate will probably be limited to bumpers only, with hub caps and body hardware being painted as on the "Victory" models of the last war.

Kaiser-Frazer will probably cut production greatly, as they have an Air Force contract to build Fairchild C-119 Packet-transports at Willow Run, thus delaying for a long time announcement of new body types on the Kaiser and Henry J.

Willys' new small car is a definite thing; the body engineering and tooling being done by Murray here in Detroit. Jeeps are taking up most of Willys production space now, so don't look for the new car for some time. It has, however, passed the rumor stage, and is definitely coming into being.

General Motors has a new body on the small Buick and Olds 88 for 1951, very similar to the present design. Rumor is that this is the last year for the Pontiac 6 and 8. '52 will see a new V-8 in the Pontiac line. A new Buick V-8 will also make its appearance in '52. Incidentally, the small displacement, supercharged engine is still very much in the engine picture here, as the experimental Harley Earl styled Buick "Le Sabre" will testify. More than one manufacturer has small, blower engines on test and on the road, as well as sample cars from Europe. More than just a research project, they point to a desire for better fuel economy, less engine weight, and more power to run the trick transmissions of the future. Gas turbines are in the research picture, too; Chrysler Corp. has a contract to build a new plant near Detroit to produce jets for the Navy, and it may be regarded as a safe bet that much research from that program will find its way into small gas turbine development. Persistent rumor is that one local manufacturer has a turbine-powered car on the road.

Packard has a new V-8 coming up—tho not too much is known about it. Minor detail changes will probably be about all Packard will do for '52, in styling.

Barring war, etc., Ford will have their new ohv V-8 and 6 in an entirely new car late this year. Not too much is known about it, except that it will probably have a front suspension similar to the new British "Zephyr" and "Consul," as well as the hydraulic clutch actuating mechanism used on the British jobs.

—SEDANETTE

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SAM COLLIER MEMORIAL

(Continued from page 7)

3rd and 4th gear left in the change box. Fighting snow-drifts on their way down from Toronto probably took its toll.

The fine pit work by the Crosley team, with guidance by Tom Cole, helped to bring this little car in with first place. Koster, Deshon and Cole had doped out the lap speeds required to keep above the Handicap Mileage for the six hours. They had several seconds reduction in reserve until the very end. The Crosley was run flat-out all the time and lap times were cut by the simple expedient of advancing cut-out points and using more brakes. This machine was ASOLUTELY stock with the exception that one leaf had been added to each front spring to stiffen up the front end. The course was exceedingly favorable to the Crosley in that Koster and Deshon were not required to shift and keep in **high gear all the time.** This precluded the well known possibility of spewing the gear teeth all over the road as happened at Watkins Glen recently. Koster and Deshon report that the Crosley suspension could stand some inprovement. As for brakes, the Crosley was reported as being able to stop in 40 yards from top speed.

Inspection of the Hot-Shot at the end of the race gave one the impression that it had been on a pleasure jaunt. Tire wear could not be noticed. The engine needed no oil or water and had exceptionally low fuel consumption. Some of the close followers of the LeMans 24-hour race are of the opinion that a production car on the lines of the tubular framed Nardi chassis, powered by the Crosley engine, might be able to beat the Dyna-Panhard which rocketed to fame as the 1950 LeMans Handicap winner. Briggs Cunningham is making a bid for the "fastest car" win at LeMans. Perhaps someone will give a try with a Crosley engine for the Handicap prize? Our manufacturers are missing a good bet by overlooking the opportunities created by the LeMans race for testing and developing a better machine which John Q. Public **will buy.**

From the conversation gleaned around the course after the race, it would be safe to say that the Sebring Handicap for the Permanent Sam Collier Memorial Trophy has become an annual event. Some say that it will be for 12 hours next year and others demand a 24-hour race the same as at LeMans. In any event, it was a grand day of racing and a remarkable performance by a group of fine sportsmen . . . . we and the 8,000 spectators hope to see more of it.

AWARDS

Awards of replicas of the Sam Collier Memorial Trophy, a permanent bowl for the main Florida event of the year, were given to those cars having the highest Index of Performance. In addition to the replicas, the Sebring Firemen donated beautiful sterling cups as prizes to the contestant having the highest index by Classes. A International flavor was lent to the Victory Dinner awards by the presentation of the trophies brought over from France by Luigi Chinetti. Two of these were from the LeMans Club in France and the other, the Adele Chinetti cup. The LeMans 24-hour trophy, which had been won by Luigi Chinetti himself for the all-out win at that famous race in 1949 was presented for the "Best Team Efficiency" and was won by the Kimberly Equippe. The other cup, donated by the French magazine, "L' Action Automobile," went to the co-driver of the winning car, Bobby Deshon. The Adele Chinetti Cup was won by Wheaton and Dillnutt from Canada for the "Most Sporting Effort to Finish."

Awards of five additional cups were made by Road and Track Magazine in the person of Oliver Billingsley, Editor. These awards were:

(1) Best Performance Factor by a Car with Closed Body (metal top)—Fiat owned by Haynes, driven by Keller and Farago.
(2) Best Performance Factor by a Car under 1000 cc—Crosley owned by Vic Sharpe, and driven by Koster and Deshon.
(3) Best Performance by a Single Driver—Van Driel (MG)
(4) Entry Exhibiting the Most Ingenuity—MG-engined Morris Minor—Fergusson.
(5) Most Courteous Driver—Luigi Chinetti.

CROSLEY VICTORY

(Editor's Note)

The David and Goliath story was repeated again at the Sam Collier Memorial Grand Prix held at Sebring, Florida, on December 31, 1950. The Crosley Hot Shot played the part of David and scored a decisive victory over the multiple Goliaths, represented here by the very potent Cadillac-Allards, XK-120's and other fast equipment.

The story is all the more remarkable because of the unusual circumstances which surround the participation of the Crosley. Vic Sharpe, of Tampa, Florida, owner of the Crosley, had planned to attend the race only as a spectator and shortly before leaving Tampa, had offered to deliver some tires to one of the participants at Sebring. In this manner he became acquainted with Tom Cole and other participants. They urged him to enter the Hot Shot, but he protested that the car was one which he had been using for everyday driving and general utility work and obviously had no chance against the highly specialized and carefully prepared equipment which was on hand for the race. After considerable explanation of the LeMans type formula and the opportunities which it presented a small displacement car, Sharpe finally agreed to enter.

Fred Koster, a veteran of many sports car races in Holland, and Bobby Deshon volunteered their services as drivers. As this decision was made the day before the actual race, it was too late to perform any serious competition tuning on the Hot Shot, so only a normal service checkup was given, the only modification being the addition of an extra leaf to the front springs to provide needed rigidity for high-speed turns. Not a few competitors were badly shaken by the lap time turned in by the Crosley during practice runs.

The Crosley crew arrived at the track almost void of necessary equipment. Among the missing was a blackboard so necessary for giving pit signals. Spectators were greatly amused at the ingenious solution of this problem. They chalked signals on the side of a suitcase and held it aloft. With stop-watches as the principal items of pit equipment, the Crosley buzzed merrily about the course, taking corners in high gear on the advice of those more experienced in Crosley matters. Holding the lead on a handicap index from the start, the Crosley was not seriously challenged until the last hour when the Kimberly Ferrari "poured on the coal" in a desperate attempt to out-index the Crosley. Several frantic "faster" signals went out to the Crosley, which surprised everyone by actually responding with materially reduced lap times.

The fact that the Crosley was an absolutely stock car without the benefit of the normal competition modifications and that it had been used in everyday transportation right up to the time of the race, left no room for criticism of the victory. Many of those with years of sports car know-how predicted an increase number of Crosleys in future competitive events, and expressed opinion that the Crosley engine would receive its fair share of consideration in construction of future specials.

LEMANS FORMULA FOR SEBRING HANDICAP

$$\text{Handicap Mileage or "d"} = \frac{C \times 3000}{C + 350}$$

(C = engine displacement in cubic centimeters)

This formula was further reduced for the shorter 6-hour race (LeMans is 24 hours) and converted to miles from kilometers. (Multiply result by 0.1426 to get "d" or HANDICAP MILEAGE.

$$\text{HANDICAP INDEX} = \frac{D}{d} \text{ or}$$

(actual distance covered during race)

(Handicap Mileage)

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CISITALIA-PORCHE G.P. CAR

(Continued from page 19)

more than the 1500 cc, making 360 hp. With such a car, it would be possible to run the Grand Prix race (186 miles) without any stops for gas. But Dusio chose the 1500 cc blown car.

The photographs accompanying this article should give to the reader a clear indication of the Auto-Union derivation of the Cisitalia Grand Prix car. Note the side location of fuel tanks, which make it possible to locate the driver's seat as far aft as the engine will allow.

The other important feature of Cisitalia Grand Prix car is the four-wheel drive, which could be disconnected any time; it is used especially for quick standing starts and for coming out of 180° curves. Because of this drive, the 4 wheels and tires are of the same size.

Besides what the photographs show, the reader can obtain a clearer conception from the following data, which is released here for the first time. The Grand Prix car has been built exactly to these specifications with one exception, which is that the Roots two-stage supercharger has been replaced by the Centric single-stage type, and the weight is 266 pounds more. The power should be considered purely a technical estimate because as we said before, the engine has never run.

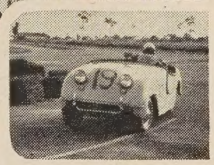
* About the end of 1948, for publicity reasons, it was decided to build the car, even tho the engine bench test had not been made. After the car was built, they tried to make the engine run by means of electric motor connected with it. After few minutes the engine froze completely. Since then, it has never been run.

Cisitalia G.P. Car
Formula 1—Type 360

No. of cylinders	12
Arrangement	"Horizontal opposed"
Block made of special alloy "Y"	
Cylinders made of cast steel	
Cyl. head	Special alloy "Y"
Bore	56 mm (2.2")
Stroke	51 mm (2")
Displacement	1500 cc (91.5 cu in)
Each Cyl.	125 cc (6.7 cu in)
Compression ratio	6:00 to 1
Crankshaft	"Hirth" type
Main bearings	7
Main bearing dia.	55 mm (2.16 in)
Conn. Rod bearing dia.	54 mm (2.12 in)
Type of main bearings	Roller
Type of conn. rod bearings	Roller
Rods made of nickel-chrome steel	
Pistons made of Dural	
*Engine speed	10,500 rpm.
*Power output	Approx. 375 hp
*Average b.m.e.p.	305.8 lb/sq in
Dual overhead cam-shafts on each bank	
Valves per cylinder	2
Intake valve dia.	34 mm (1.33")
Exhaust	28 mm (0.97")
Caloric value of plugs	500
Carburetor	Special, without float (Porsche type)
Supercharger	3 lobe Roots—2 stage
Transmission	5 speeds forward and reverse Semi-automatic. Hydraulic pre-selector with clutch pedal.
Drive	On 4 wheels; disconnectable at front.
Front suspension	Porsche type
Rear suspension	Parallelogram — Independent wheels
Dia. of front and rear brakes	400 mm (15.7")
Frame	Tubular truss
Wheelbase	2700 mm (106")
Tread	1400 mm (55")
*Maximum speed	211 mph
Front and rear tire size	7.00-18
*Fuel consumption	550-600 gr/HP-hr.
Theoretic dry weight	1322 pounds
*Weight/Power ratio	3.526 lbs per hp
Actual dry weight	1586 lbs
*Weight/Power ratio	4.187 lbs per hp

* Estimated

CROSLEY WINS COLLIER RACE



A Crosley car that was in regular use as a passenger car and not tuned up for racing, ran off with the coveted Sam C. Collier Memorial Grand Prix at Sebring, Florida. Against a highly competitive field of foreign sports cars costing up to $20,000, the Crosley led the field all the way in the gruelling 6-hour endurance race sponsored by the Sports Car Club of America. The Crosley had such stamina that it made only one pit stop—to take on gasoline! No water or oil was added during the race. Despite the high speed (52 m.p.h. average for the six hours) the car gave typical Crosley economy—over 35 miles to the gallon!

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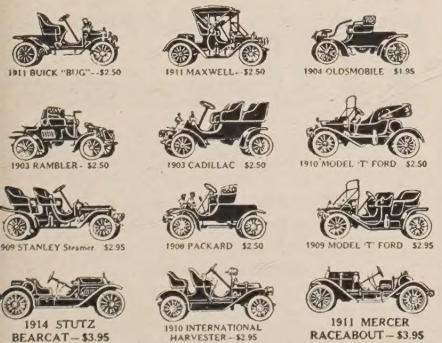

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NEWS ITEMS

CARRELL SPEEDWAY SPORTS CAR RACE FEB. 25

On Sunday, February 25, Carrell Speedway in Gardena, California, will be the site of a series of sports car races. Chicanes will be erected to provide additional corners on the ½-mile dirt track and standing starts will be used. All races will be run in a clockwise direction. A large entry is expected, including Jaguars, Allards, and MGs.

PHIL HILL TO DRIVE 2.9 ALFA

One of the nation's leading road race drivers is changing cars. Phil Hill has sold his highly successful Jaguar XK-120 and has purchased an Alfa Romeo. The Alfa is the ex-T. Lee 2.9 litre 8-cylinder pre-war model with two roots-type superchargers. It has competed previously at Pikes Peak and Watkins Glen.

AUTO ACCESSORIES TO SELL HILLMAN CARS

George M. Friedland and Milton Stanton, who are well known as owners of Auto Accessories Co., have added the sales agency for Hillman, Jaguar and Humber cars. Needless to say, the new dealership will have available outstanding doll-up and speed accessories for these British cars.

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R/P Imported Motor Car Co. of New York have been appointed distributors for the Cooper 500 cc Formula 3 road race car. American enthusiasts will soon see Europe's fastest "500" in action. Selling at a much lower price than any other type of racing car, the Cooper should find a ready market in this country.

AMERICAN SPORTS CAR

America's fastest production car is being built in West Palm Beach, Florida, by Briggs Cunningham and Frick-Tappet Motors. As yet unnamed, three of these cars will run at LeMans this year.

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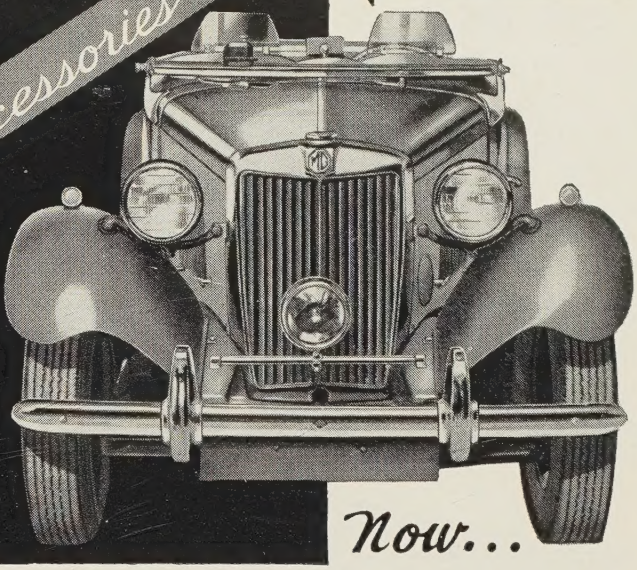

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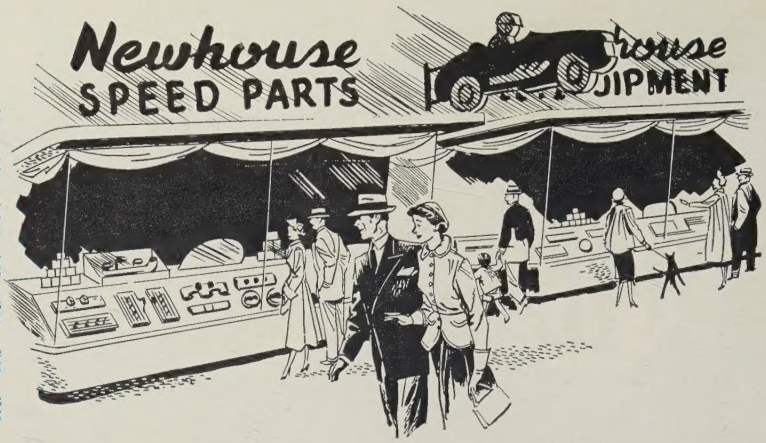

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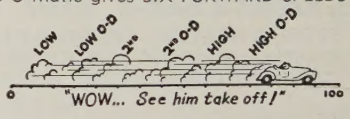

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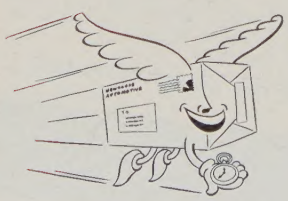

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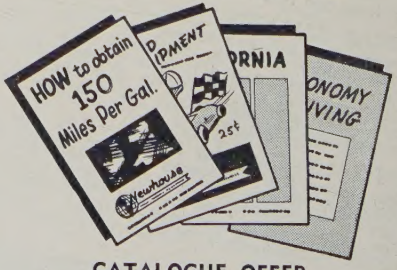

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